Volume XXV
Number 7
July 1949

SOAP and SANITARY CHEMICALS

CONTENTS

Editorials 23
Soap Census 25
Coconut Oil Outlook 28
By Lee Chase
Effect of Soap on Skin (Part II) 31
By John A. Killian and M. Elizabeth Marsh
Canada Soap Sales Statistics 35
Salt 37
By John R. Skeen
Shampoo Formulation 61
Danger Ahead (A guest editorial) 102
By Gordon W. Baird
Effect of Various Water Ions on Bactericidal Properties of Quaternaries 103
By E. H. Armbruster and G. M. Rideaour
DDT Developments 107
By E. F. Knipling
Carnauba Wax—Adulterated? 113
By A. G. Bowers
Soap Dispensers (Part II) 115
By E. G. Thomsen
New Colloidal Silica for Floor Waxes 121
By Michael Sveda
Raw Material Markets 51
Bids and Awards 53
New Trade-Marks 55
Production Clinic 67
Products and Processes 73
Soap Plant Observer 75
New Patents 79
Sanitary Products Section 83
Technical Briefs 127
Classified Advertising 151
Advertisers' Index 155

FRANK J. REILLY, Editor

Associate Editors
ELEONORE KANAR
JOHN VOLLMUTH

Business Manager
THOMAS MORGAN

Published Monthly By
MAC NAIR-DORLAND COMPANY
254 W. 31 St., New York 1, N. Y.

Ira P. MacNair, Pres.
Grant A. Dorland, V. Pres. and Treas.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Subscription rate, $4.00 per year. Foreign, including Canadian, $5.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Entered as second-class matter June 16, 1949, at the Post Office, New York, N. Y., under the act of March 3, 1879.

. . . USE Emery Oleic Acids . . .

a NEW High in Quality at Less than Pre-War Prices!

Lowest Unsaponifiable Content *(All Grades)*

Current production of all Emery oleic acids are higher in saponifiable content (lower unsaponifiable) than ever before, more reactive material per pound or per dollar.

Highest Color Stability

The unique stability of all Emersol Elaines is reflected in a similar stability in most products made from them. This will be noted in less darkening of original color under conditions of reacting or compounding, less tendency for finished product to oxidize or become rancid.

High Oxidation Resistance *(Mackey Test)*

All Emery Oleic Acids resist oxidation as indicated by their performance in the Mackey test. While Emersol 233 LL Elaine excels, regular grades are substantially better than competitive products.

Highest Oleic Content *(No Rosin Acids)*

Emersol 233 LL Elaine, the latest addition to Emery's oleic acids has been manufactured for those uses requiring minimum amounts of polyunsaturated fatty acids. Emersol 233 contains in excess of 90% monounsaturated fatty acids.

High Quality, Uniformity, Low Cost *(Emersol Elaines)*

	Titre	*Color Lovibond*	*Unsaponifiable*
Emersol 210 Elaine.....	8-11°C	30/8.0-1"	2.5%* max.
Emersol 211 Elaine.....	3-5°C	30/8.0-1"	2.5%* max.
Emersol 220 Elaine.....	8-11°C	15/1.5-5¼"	1.5%* max.
Emersol 221 Elaine.....	3-5°C	15/1.5-5¼"	1.5%* max.
Emersol 233 LL Elaine.....	6-9°C	5.0/0.5-5¼"	1.5% max.

**Former Unsap specifications for 210, 211—3.0%; for 220, 221—2.0% (233 is a new product)*

At the new low prices oleic acid becomes an indispensable raw material. Products made from or containing oleic acid which have always been superior in performance, are now replacing the less efficient and consequently, more expensive substitute.

EMERY INDUSTRIES, INC.

4206 CAREW TOWER, CINCINNATI 2, OHIO • Export Dept.: 5035 R.C.A. Bldg., New York 20, N. Y.

2002 Woolworth Building, NEW YORK 7, N. Y. — 107 Perry Street, LOWELL, MASS. — 401 North Broad Street, PHILADELPHIA 8, PA.

Representatives:

CLARENCE MORGAN, INC., 919 N. Michigan Ave., Chicago 11, Ill

SCHIBLEY & OSSMAN, 33 Public Square, Cleveland 13, Ohio

ECCLESTONE CHEMICAL CO., 2673 Guoin, Detroit 7, Mich

H H LOOMIS, 369 Pine Street, San Francisco, Cal

STEARIC ACID • OLEIC ACID • ANIMAL AND VEGETABLE FATTY ACIDS • TWITCHELL PRODUCTS • PLASTICIZERS

AS THE EDITOR SEES IT

ELSEWHERE in this issue, we have published a letter from F. B. Wise, secretary-treasurer of the National Renderers Association, who naturally disagrees strongly with our criticism of legislation which calls for the establishment of "equalization fees" on imported oils and fats when domestic oils and fats are below an established "parity." This idea would work similarly to farm support prices. But, instead of supporting prices by compensating producers, oil and fat prices would be supported by penalizing consumers of imported materials.

Along the lines of the general policy of agricultural support prices, Mr. Wise answers numerous objections to legislation calling for oil and fat import "fees" and the old-time "drawback" principle. He presents a strong case for the domestic producer, — that is until he gets around to coconut oil. And it is there, we feel, that the renderers' case is weak. Already this oil carries a three-cent processing tax for which there is little rhyme or reason today. To tax it further is to tax again those least able to bear the burden, the small soaper for whom this is by far the most important raw material, — and a raw material which cannot be duplicated in the soap kettle by any domestic oil or fat.

The renderers maintain this proposal for import fees is actually a two-way proposition designed principally to expand exports of oils and soaps. But, soapers are skeptical. They remember the twenty-five cent tallow market of two years ago and ask why "equalization fees" then had no place in the picture. Why, they ask, should not excessively high prices be "equalized" as well as prices which are too low? Soapers had to wait for the law of supply and demand to operate, but the renderers want Congress to do the same type of job for them in a hurry, soap industry opinion contends. All of which boils down to what is sauce for the goose should be sauce for the gander, as we see it.

In view of the oft-predicted world-wide fat and oil shortages which our government experts told us a year or two ago would extend well into 1950-51 and possibly beyond, no wonder exists that tallow, grease and some other fats and oils are overproduced. Furthermore, the prices at which they sold two years ago invited this very condition. And how long did sensible renderers and other fat producers think the bonanza would last? Forever? Even though the battle which the Renderers Association is putting up in Washington is to be admired, we still feel that in the light of the events of the past few years their position in this "equalization fee" proposal is not too sound.

HOW much perfume should a bar of medium-priced toilet soap contain when it leaves the factory? For some time past, we have had a hunch that some soapers are skimping on their perfumes. It has seemed to us that the odor of the soap stock itself has been too prominent in the lather of certain toilet soaps. We have always felt that no characteristic soapy odor should be evident even in a cheap toilet soap if it were properly perfumed. With all this in mind, we undertook to place the above question before a half-dozen well-known perfumers, all experts in our opinion eminently qualified to supply the answer. But, no two gave exactly the same figure.

For a run-of-the-mine toilet soap, that is a large production item for medium price, the average answer was one per cent. Naturally, the type and quality of the odor used brought modified replies as might be expected. It was pointed out that a half-per cent of perfume was being used in some soaps to the evident satisfaction of the maker. What the opinion of the user might be was not stated, nor probably known. Some higher priced toilet soaps, and most of the imported soaps, carry up to two per cent and more of perfume. Naturally, the contrast is very obvious as might be expected.

In large-scale soap production, an increase of one or two-tenths of a per cent in perfume can add a considerable chunk to over-all costs. This was especially true a year or two back when perfuming materials were much higher in price. Some soapers cut down pretty low on perfume then, and many feel that their products are still satisfactory on the same basis. But we are beginning to have our doubts. We wonder if an increase in perfume is not worth while from the sales angle today. The war is over. People are far more quality conscious. And this goes for toilet soaps, even cheap toilet soaps. The products of those soapers who have improved their perfuming show up far better on the sales counter, — which might be something for those who are still skimping to think about.

TOO much money is being paid by state institutions for the purchase of liquid soaps, disinfectants and certain other chemical specialties, according to a legislative committee looking into the matter at Jackson, Mississippi. The high-price "racket" is being encouraged by salesmen who hand out premiums to institution buyers, the report of this committee continues. And the next step, according to the recommendations of this same committee, is for the state to make its own sanitation chemical products at the penitentiary. A law already authorizes this latter procedure, but there is one hitch, — no funds have been appropriated to establish and equip the necessary plant.

For salesmen who hand out graft, be it in cash or in the form of some gaudy "premium" as is often the case, we hold no candle. And the so-called purchasing agent who accepts such graft is just as much of a crook as the salesman who hands it out. But, if any state legislators believe that building their own plant and making their own soaps, disinfectants and the like is the answer, they are miles off the track in our opinion. The same conditions would apply only on a slightly different basis and the fundamental faults would remain unaltered. Until political expediency ceases to overshadow public purchasing, we have little hope of improvement. And certainly, a state-operated plant would not mean less politics; it would mean more.

THE value of soaps, detergents and glycerine produced in the U. S. in 1947 topped the billion dollar mark. In fact, the 1947 total was more than three times the figure for 1939, the last previous year for which the Bureau of the Census gathered the figures and reported. Raw materials used by soapers in 1947 cost over $640,000,000 or four times as much as they spent for this purpose in 1939. The number of employes increased about 35 per cent during this intervening war period, but wages and salaries increased close to 200 per cent. The average per worker annual wage for the industry in 1939 was around $1,700. By 1947, this had become $3,300.

Synthetic organic detergents were valued at about $135,000,000 in this 1947 Bureau of Census report. Alkaline detergents were listed at something over $36,000,000. Specialty detergents which includes glass cleaners, spot removers, wall and paint cleaners, and the like totalled $44,000,000. Polishes including floor waxes came to $110,000,000. Sulfonated oils and textile specialties were $52,000,000. Where comparable figures are available, all showed wide increases over 1939.

A study of the census figures for 1947 reveals a host of interesting data. Above all it emphasizes the tremendous growth of soap, detergent, cleaner, polish and allied manufacture during the war period. It also emphasizes the sharp rise in raw materials and other costs, and to a degree tends to deflate the high dollar volume figures. High prices were probably responsible for these figures to a greater degree than increased tonnage. The increase in average wages is particularly significant.

Comparing the trend in sales and prices during 1948 and 1949, we surmise that 1947 was the peak year of the post-war period. In fact, it was probably the peak in dollars and tonnage in the history of the soap, detergent, glycerine and allied industries. But the high waters of the boom have receded and left behind some unpleasant debris in the form of high costs, bad selling habits, and questionable manufacturing practices. As the figures might indicate, these were minor details in 1947. But in 1950 and thereafter for some time to come, they will be vitally important to those soapers who would meet competition and make a profit. Indeed, 1947 was a soapers' honeymoon, but today, the cold, grey dawn is upon us.

SOAP CENSUS...

1947 Census, first since '39, shows billion dollar volume...fewer soap plants...wages, salaries and material costs in big increase.

SOAP and glycerine producers in 1947 shipped products valued at $1,085,789,000, as compared with $302,634,000 in 1939, according to figures contained in the 1947 Census of Manufactures for the soap, glycerine, cleaning and polishing preparations and related products industries, issued late in June by the Bureau of the Census of the Department of Commerce. The 1947 Census is the first to be issued since the war; the last one having been for the year 1939. Statistics on soap and glycerine contained in the current report go back to 1904.

Although the value of products shipped greatly increased between 1947 and 1939, the number of plants reporting dropped from 264 for the latter year to only 249 in 1947. Number of employees and their wages, "value added by manufacturers and cost of materials, fuel, electricity, and contract work also showed sharp increases in 1947, as compared with 1939.

TABLE 1.—General Statistics for the United States: 1947 and Earlier Census Years

[Money figures in thousands of dollars. For explanation of column captions see General Explanations]

Industry and Census Year	All employees: Number of establishments	All employees: Number (average for the year)	All employees: Salaries and wages, total	Production and related workers: Number (average for the year)	Production and related workers: Wages, total	Value added by manufacture[1]	Cost of materials, fuel, electricity, and contract work	Value of products shipped[2]
Soap and glycerin:				19,394	$57,619	$450,721	$640,424	$1,085,789
1947	249	27,660	$93,638	13,624	18,801	141,632	161,002	302,634
1939	264	20,191	33,091	14,008	19,075	116,122	185,170	301,292
1937	232	17,628	26,779	13,911	15,339	99,659	139,493	239,152
1935	238	17,053	22,390	14,304	14,140	106,621	93,507	200,128
1933	235	17,828	20,451	14,163	17,740	135,890	121,829	257,719
1931	248	n.a.	n.a.	14,363	18,995	129,839	180,353	310,192
1929	282	19,051	30,498	13,432	19,716	114,816	172,244	287,060
1927	256	17,591	29,482	15,406	18,526	93,399	184,874	278,273
1925	272	20,009	28,833	17,002	20,776	102,857	173,546	276,403
1923	270	24,238	36,487	16,558	18,865	89,839	150,356	240,195
1921	283	22,919	32,566	20,436	21,228	78,221	238,519	316,740
1919	348	28,736	35,400	14,172	8,088	39,075	88,867	127,942
1914	371	19,587	14,780	12,999	6,227	39,179	72,179	111,358
1909	420	18,064	11,732	11,044	4,763	24,649	43,626	68,275
1904[3]	436	14,102	8,265					
Cleaning and polishing preparations:								
1947	1,038	15,352	48,209	9,090	20,984	135,120	126,854	261,565
1939	637	9,978	15,965	5,128	5,667	52,097	37,670	89,767
1937[4]	510	7,057	10,716	4,877	5,422	45,422	31,632	77,054
1935	562	6,612	10,052	4,322	4,500	34,648	25,691	60,339
1933	481	6,060	6,960	4,380	4,226	38,442	21,662	60,104
1931	544	n.a.	n.a.	3,950	4,635	44,430	23,920	68,350
1929	599	6,720	11,691	4,330	5,316	47,717	27,744	75,461
1927	517	6,281	10,491	4,119	5,169	39,378	24,405	63,783
1925	470	6,342	10,371	4,030	4,824	36,634	22,441	59,075
1923	473	7,189	11,011	4,541	4,916	37,412	23,853	61,265
1921	452	5,494	7,980	3,353	3,407	21,310	20,321	41,631
1919	719	7,494	10,325	4,410	4,088	25,022	26,965	51,987
1914	595	4,964	4,152	3,005	1,496	10,009	9,024	19,033
1909	501	3,973	2,926	2,417	1,146	7,717	6,962	14,679
1904	294	2,505	1,511	1,782	738	4,268	4,383	8,651
1899	275	2,444	1,346	1,758	634	3,546	3,152	6,698
Sulfonated oils and assistants:								
1947	105	1,950	7,906	1,245	3,439	20,238	31,268	51,506
1939[5]	85	n.a.	n.a.	757	935	7,259	10,504	17,763

n.a.—Not available.

[1] Value of products less cost of materials, supplies, fuel, electricity and, contract work. See General Explanations—Value added by manufacture. For "Soap and glycerin" and "Cleaning and polishing preparations," see General Explanations—Method of calculating value added by manufacture in 1947 for selected industries.

[2] For 1947 and 1929, value of products shipped; for all other years, value of products made. See General Explanations—Value of products shipped.

[3] In 1899, "Soap and glycerin" was combined with "Candles" in a single industry. Separate figures are, therefore, not available.

[4] Figures for 1899-1937 comparable with those for 1939 and 1947 were obtained by combining the data for "Cleaning and polishing preparations" and the discontinued classification "Blacking, stains, and dressings."

[5] "Sulfonated oils and assistants" was classified prior to 1947 in the discontinued industry, "Tanning materials, natural dyestuffs, mordants, assistants, and sizes." The dyestuffs 1939 figures were obtained by retabulation of the 1939 returns for the latter industry. No comparable data are available for prior years.

Table 6.—Quantity and Value of Products, Totals for the United States: 1947 and 1939

[All figures in thousands]

Product	Unit of measure	1947		1939		
		Total shipments and interplant transfers		Production	Produced for sale	
		Quantity	Value f.o.b. plant	Quantity	Quantity	Value
Soap and glycerin, total		.....	$960,471	.....	.....	$292,157
Soap, except specialty soap		.....	806,030	.....	.....	.....
Bars:						
Toilet	Pounds	555,451	187,824	565,617	409,116	66,209
Laundry and household:						
White	do	407,694	87,418	406,561	660,663	29,883
Yellow	do	356,281	43,524	358,329	578,785	27,670
Other, (including industrial)	do	27,209	4,569	28,105	.....	.....
Chips and flakes:						
Packaged	do	230,720	67,224	227,961	284,266	24,988
Bulk	do	195,934	39,576	195,106	134,313	9,484
Granulated, powdered and sprayed:						
Packaged	do	1,391,116	279,994	1,412,458	892,655	75,432
Bulk	do	131,679	21,449	133,989		
Washing powder:						
Packaged	do	80 478	5,909	84,839	131,756	5,304
Bulk	do	103.859	6,258	106,318	110,366	3,179
Cleansers, containing abrasives:						
Packaged	do	265,723	22,422	267,087	n.a.	n.a.
Bulk	do	77,109	6,253	77,185		
Liquid, excluding shampoos (potash and other):						
Packaged	Gallons	2,221	2,180	2,247	42,782	3,629
Bulk	do	14,247	10,447	14,454		
Paste and jelly (potash and other):						
Packaged	Pounds	12,043	1,680	12,931	.....	.....
Bulk	do	31,825	4,557	33,015	.....	.....
Other soaps (including soap stock)		.....	14,746	.....	.....	[1]18,475
Specialty soaps		.....	32,452	.....	.....	.....
Mechanics hand soaps and pastes	Pounds	50,445	6,384	.....	17,914	935
Medical and medicated	do	5,630	3,144	.....	n.a	n.a.
Other specialty soaps		.....	8,997	.....	.....	.....
Shaving cream lather:						
Tube	do	.....	8,340	9,049	7,941	6,157
Jar	do	.....	182	265		
Shaving soap	do	.....	5,405	6,348	5,605	2,395
Soap products not specified by kind		.....	33,413	.....	.....	.....
Glycerin (100 percent basis)		.....	88,576	.....	.....	18,417
Crude	Pounds	40,997	16,222	206,186	[2]29,266	2,323
High gravity, dynamite, and yellow distilled	do	81,588	34,211	86,943	64,294	6,595
Chemically pure	do	92,220	38,143	103,900	90,382	9,499
Cleaning and polishing preparations, total		.....	$351,325	.....	.....	.....
Synthetic organic detergents		.....	134,768	.....	.....	.....
Not in combination with soap or other detergents:						
Liquid:						
Packaged	Gallons	870	1,017	853	.....	.....
Bulk	do	3,703	2,864	3,783	.....	.....
Solid:						
Packaged	Pounds	242,759	87,543	243,734	.....	.....
Bulk	do	9,196	1,634	14,849	.....	.....
In combination with soap:						
Liquid:						
Packaged	Gallons	397	770	397	.....	.....
Bulk	do	1,021	1,285	1,040	.....	.....
Solid, packaged and bulk	Pounds	17,296	1,139	17,304	.....	.....
In combination with alkaline detergents:						
Liquid:						
Packaged	Gallons	84	106	82	.....	.....
Bulk	do	1,122	1,199	1,138	.....	.....
Solid:						
Packaged	Pounds	22,169	3,806	23,548	.....	.....
Bulk	do	58,753	6,026	58,992	.....	.....
Bulk surface active agents, except sulfonated oils and fats (synthetic organic chemicals)		.....	27,379	.....	.....	.....
Alkaline detergents		.....	36,488	.....	.....	.....
Liquid:						
Packaged		.....	403	.....	.....	.....
Bulk		.....	403	.....	.....	.....
Solid:						
Packaged	Pounds	94,789	9,923	96,030	.....	.....
Bulk	do	295,089	25,759	297,090	.....	.....
Specialty detergents		.....	$44,371	.....	.....	.....
Glass window cleaning liquids	Pounds	5,243	3,493	.....	.....	.....
Oil and dust absorbents, including sweeping compounds	do	75,351	1,742	.....	.....	.....

TABLE 6 (Continued)

Toilet bowl cleaners	do	47,745	6,821	.....	.....	.....
Wall paper, window shade and paint cleaner	do	110,432	17,072	.....	.....	.....
Drain pipe solvents	do	16,900	3,017	17,684	.....	.....
Dry cleaning spotting preparations	Gallons	6,452	6,958	6,755	2,345	$2,725
Paint and varnish removers, including brush cleaners:						
Powder	Pounds	2,195	616	2,297	n.a.	1,825
Liquid	Gallons	3,714	4,652	3,765		
Polishing preparations and related products	.....	.....	110,147	.....	.....	47,816
Automotive body polish	Pounds	22,949	7,526	23,654	n.a.	4,517
Furniture polish	do	26,177	7,258	23,753	.....	.....
Floor polish:						
Water emulsion	Gallons	20,404	36,057	20,742	n.a.	8,910
Liquid (other than water emulsion)	do	1,871	3,331	1,977	n.a	7,210
Paste	Pounds	18,255	6,324	18,364		
Other	do	3,458	1,321	2,393	.....	.....
Metal polish (except stove polish)	do	17,156	3,829	17,367	n.a.	1,954
Shoe polishes and cleaners:						
White:						
Liquid	Gallons	1,553	3,549	1,819	n.a.	3,682
Paste	Pounds	2,364	1,478	2,247		
Other than white:						
Liquid	Gallons	2,309	6,341	2,263	n.a.	8,975
Paste	Pounds	8,583	5,064	8,658		
Leather dressings and finishes (except shoe polish):						
Leather blackings and stains	do	6,254	2,129	6,252	.....	.....
Other leather dressings and finishes	do	36,998	9,721	36,408	.....	.....
Dressings, (except leather)	do	2,314	933	2,617	.....	.....
Other polishing preparations and related products not elsewhere classified	.....	.....	15,306	.....	n.a.	12,568
Cleaning and polishing preparations, not specified by kind	.....	.....	25,551	.....	.....	.....
Sulfonated oils and assistants, total	.....	.....	52,279	.....	.....	22,101
Sulfonated oils and fats	Pounds	84,604	16,991	.....	67,565	5,534
Softeners, soluble oils and greases	do	82,035	16,007	.....	83,610	7,500
Other assistants[2]	.....	.....	17,459	.....	.....	9,067
Sulfonated oils and assistants, not specified by kind	.....	.....	1,822	.....	.....	n.a.

n.a.—Not available.
[1] For 1939, includes soap stock made for sale as such; bar cleansers containing soap; textile soap; potash soap, other than textile and hand; and soap not reported according to 1939 classification.
[2] Crude, 80 percent basis.
[3] Data for 1947 include figures for egg yolk, wetting agents, waterproofing emulsions, mordants other than tannic acid and an undetermined quantity of sizes, soaps and synthetic detergents. The 1939 data include figures for soaps and other detergents, mordants other than tannic acid and excludes figures for egg yolk and sizes.

The average number of employees and their wages in 1947 was 27,660 and $93,638,000, as compared with 20,191 and $33,091,000 for 1939. The average number of production and related workers two years ago totaled 19,394, with wages of $57,619,000, as against 13,624 workers earning $18,801,000 a decade ago.

Figures on value added by manufacture for 1947 and 1939 are, respectively $450,721,000 and $141,632,000.

The 12-page Census contains six tables on the soap, glycerine, cleaning, polish and such related products as sulfonated oils and assistants industries. Tables cover general statistics for the United States in 1947 and previous census years; general statistics by divisions and states; detailed statistics; selected general statistics by size of establishment; value of products shipped, by broad classes of products; quantity and value of products.

The 1947 Census gives statistics for establishments engaged primarily in the production of soaps and other detergents, glycerine, polishing preparations, leather dressings and finishes, and sulfonated oils and assistants. These establishments have been classified in three industries which are described separately.

In classifying the establishments in this Census report, distinction was made between manufacturers of soap products who produced these commodities from fats and alkalies and those who produced the same soap products from purchased soap (soap converters). Insofar as could be determined the former were included in the soap and glycerine industry (industrial rating 2841), whereas those who made soap products from purchased soap were classified either in the cleaning and polishing preparations industry (industrial classification 2842) or, if shaving creams and shampoos were primarily produced, in the toilet preparations industry (industrial classification 2893).

No attempt was made to secure commodity detail for bulk surface active agents reported to the United States Tariff Commission. Establishments reporting to the Bureau of the Census furnished dollar values for all surface active agents. For sulfated and sulfonated oils, fats and waxes, quantities shipped were also reported to the Census Bureau.

E. A. Seidenspinner Dies

Earle A. Seidenspinner, president, Eldorado Oil Works, San Francisco, died June 12. He joined the Eldorado organization in 1934 as an assistant manager in the Philippines. One year later he was transferred to the company's head office as assistant to the board of directors. He was named president in 1946 after serving as executive vice president.

A Crusher's View on the

Coconut Oil Outlook

By Lee J. Chase, Jr.
Spencer Kellogg and Sons, Inc.

IT IS difficult to discuss coconut oil without getting into a general discussion of the other major fats and oils. All fats and oils affect each other to some extent and most are interchangeable, at least to some degree. It follows, therefore, that no one fat or oil can get too far out of price relationship with other fats without drastically affecting the consumption of the over-priced fat.

As you all know, the principal use of coconut oil, and by far the greatest volume of consumption of coconut oil, is in the manufacture of soap. Probably of secondary importance is the use of coconut oil as an edible oil in the candy and biscuit and cracker industries. Other essential uses include the manufacture of synthetic rubber; hydraulic brake fluid for airplanes; the production of plasticizers used in the manufacture of safety glass and cellulose acetate molding powder; in synthetic resins; insecticides and germicides; and in the production of sulfonated higher alcohols. In addition to these specific uses, coconut oil is important in that it yields approximately 40 per cent more glycerine per pound of oil than any of our domestic fats.

Just a word now on the actual mechanics of producing coconut oil and a little later on a few words on the present tax structure as it affects copra and coconut oil. When the dried meat of the coconut (called copra) is crushed, approximately 63 per cent of the outturn is coconut oil. The by-product, of course, is copra meal, primarily used in feeds for livestock, particularly by the dairy industry. It takes about three coconuts to produce a pound of dry copra and a coconut tree will produce about 30 nuts a year. There is nothing difficult or secret about the actual mechanics of crushing copra. Most crushers in the United States now employ the well-known Anderson "Super Duo" type of expeller.

A bit of history may be helpful to understand thoroughly the situation in coconut oil and in copra that exists today. Prior to the war years (during 1937-41) imports of coconut oil and copra in terms of the oil equivalent averaged approximately 700,000,000 pounds each year, roughly 50 per cent each in terms of copra and coconut oil. The figure indicating actual oil imported, of course, proves that considerable crushing equipment was present in the islands. Most of this equipment became a war casualty. The Philippines received their independence in 1946 and all importations of coconut oil from the islands are now regulated by the Philippine Trade Act of 1945. The quantity of coconut oil from the Philippines which may be imported into this country duty-free was set under this act at a maximum of 200,000 long tons per year through 1954. This 200,000 long ton figure progressively shrinks by 10,000 tons each year, starting in 1955, so that by the year 1974 no Philippine coconut oil may be imported into the United States duty-free. There is no duty on copra imported into the U. S. from any source.

Therefore, it follows that few U. S. companies cared to re-invest capital for copra-crushing equipment in the Philippine Islands at the end of hostilities, as after 1974 Philippine-produced coconut oil will be at a disadvantage as compared with duty-free imports of copra.

There is also a processing tax of $.03 per pound collected on the first domestic processing of all coconut oil consumed in the U. S. An additional $.02 per pound processing tax is levied on coconut oil of non-Philippine origin, which makes the total processing tax collectible on, say, Ceylon coconut oil a total of $.05 per pound. This $.02 differential in favor of Philippine oil, however, is suspended at the present time under a provision of the Philippine Trade Act of 1945. This proclamation was issued by President Truman on June 27, 1946. The suspension will remain in effect until the supply of Philippine coconut oil in the U. S. is adequate to meet domestic needs. If the Philippine copra supply is sufficient to meet U. S. requirements, the $.02 tax can be imposed regardless of other economic conditions. As Philippine copra production this year is estimated at about 700,000 tons, it is doubtful that the U. S. will use that much in 1949. Latest information is that not all government agencies are in agreement as to whether the differential should be re-imposed; therefore, the matter has been turned over to the Budget Bureau to coordinate the conflicting views of the agencies. When final reports are completed they will be combined by the Budget Bureau and sent to the President. It is up to him to make final decision and to issue a thirty-day proclamation if he decides to support the Philippine government request. With no definite information to support my views, I am of the opinion that the $.02 differential may be re-imposed within the next few

* Before the 35th annual mid-year meeting of the National Association of Insecticide and Disinfectant Manufacturers, Hotel Drake Chicago, June 13, 1949.

months. It is true that almost all of the coconut oil used in the U. S. continues to originate in the Philippine Islands. Coconut oil imported as such into the U. S. from areas other than the Philippines pays a tariff duty of $.01 a pound, collected by the customs at the port of entry, whereas the processing tax mentioned earlier is collected by the Bureau of Internal Revenue. In connection with possible margarine legislation a so-called Martin Bill has been prepared in Washington. It is designed to remove the $.03 per pound excise tax from coconut oil. There appears to be no chance of elimination of the present $.03 processing tax during this session of Congress. On the other hand, the National Renderers Association, among others, is interested in increasing taxes on imported oils as a means of protecting domestic fats against imports of foreign vegetable and animal fats. There has been some talk of excise taxes as high as $.10 per pound. Senator Gillette (D-Iowa) and Senator Wherry (R-Nebr.) are sponsors of a bill which would incorporate some such protective provisions.

While we are on the subject of the present $.03 per pound excise tax and agitation on the part of the National Renderers Assn. and others to increase this tax, the other side of the picture should be briefly discussed.

THERE are coconut oil consumers and others interested in producing coconut oil who feel that the present excise tax legislation was enacted without regard to the future effect of the tax. Remember that this tax was passed at the height of the depression, 1933-34. These people feel that foreign consumers, not handicapped by such a tax, have benefited the most. The result has been a depreciation of the purchase price by U. S. buyers in the producing countries which, in turn, permits foreign buyers to import larger quantities of coconut oil at cheaper prices. As all fats and oils are interrelated pricewise, the foreign cottonseed oil, soybean oil, peanut oil, etc. market has also been affected. The main point, however, is that foreign countries could supply themselves with coconut oil for edible consumption cheaper than U. S. buyers could use coconut oil in soap. In the European countries coconut oil is a major ingredient in the margarine industry, whereas in the United States, our margarine manufacturers have, primarily for political reasons, turned to practically 100 per cent domestic fat usage.

With talk of increased taxes on coconut oil, some as high as 10 cents, indications are that prices may go higher and supplies decline.

It has been pointed out that this tax on coconut oil is the very reason for the present situation in tallow. The answer, it is claimed, rests in one word: "detergents."

It is necessary to use fairly large quantities of coconut oil, along with tallow, to produce a soap which can compete in quality with detergents. If coconut oil with the $.03 tax piled on top of its cost makes the average cost of the soap formula too high to compete with detergents, then there is no demand for either coconut oil or tallow. As will be pointed out, imports of copra and coconut oil for the last few months are way off—and tallow has been a drug on the market.

I have no specific comment to make on any possible action by Washington on the S-1594 (Gillette-Wherry Bill) except to say that recent news from Washington indicates the status quo will be maintained.

With a little bit of history and the taxation side of coconut oil out of the way, we can now approach the meat of the situation, which is that coconut oil today is over-priced and far out of line with competing fats in both the soap and edible oil industries. Today, for example, and I am speaking of spot prices, tallow is at $.0575 per pound, soybean oil at $.0975 per pound and cottonseed oil at $.10 per pound versus coconut oil at approximately $.19 per pound delivered Chicago. The coconut oil price, of course, includes $.03 per pound processing tax and about a cent a pound freight to Chicago from the West Coast. We all realize that coconut oil, or some other high lauric acid oil, is necessary to the production of a high grade soap, through the lathering ability the coconut oil supplies to the product. It has been said at times that a first class toilet soap will consist of three-quarters tallow and one-quarter coconut oil. It is only sound business sense, therefore, for a soap manufacturer, an insecticide manufacturer, or an edible consumer to seriously curtail his use of coconut oil on the basis of present prices. The edible consumers particularly have turned away from coconut oil wherever possible. Substitute products made from hydrogenated soybean, peanut or cottonseed oils are quite popular and widely used. For example, our company and many others possessing edible refineries manufacture quality edible coconut oil substitutes marketed today at prices roughly $.05 per pound under edible coconut oil. The $.05 per pound price is equal to $3,000.00 per 60,000-pound tankcar —obviously a worthwhile saving.

FROM a copra crusher's point of view, it has been practically impossible in the last few months to purchase Philippine copra at a price which would permit him to maintain a crushing margin, yet find a buyer for the oil. Logically enough, imports of copra and coconut oil in 1948 did not reach 1947's record total. Combined receipts of copra and coconut oil amounted to 673,000,000 pounds oil equivalent in 1948, some two hundred million pounds less than in 1947 and about twenty-five million pounds less than the 1937-41 average. Imports of copra and coconut oil during the first three or four months of 1949 are again off sharply.

Probably it is not wise to speculate too much on the reasons why the Philippine copra market continues to ignore the downward price trend of competing fats and oils, but probably some blame can be placed at the door of the Economic Cooperation Administration, commonly known as "E.C.A.," which is the agency doling out American dollars to foreign claimants for the purchase of Philippine copra. CCC

buying activities have also contributed to strengthen copra prices. The average copra seller in the Islands is a bullish individual who has been in the fortunate position of finding his product in keen demand from foreign claimants possessing American dollars. You may wonder why a foreign claimant would not prefer to purchase American cottonseed or soybean oil at approximately $.10 f.o.b. mid-western American mill in preference to purchasing Philippine copra, which we can express at between $.13 and $.14 per pound of oil for future positions on today's market. Copra, when last quoted, was somewhere between $170 and $180 per long ton f.o.b. the Islands. The answer is fairly obvious when you consider that the foreign countries have no $.03 per pound excise tax to add to the coconut oil cost, nor must they consider inland rail freight from soybean or cottonseed mill to the nearest coast before water freight to final destination is considered. We discussed the effect of the excise tax on foreign produced edible-type oils earlier. Therefore, we have a situation where available Philippine copra supplies may have been over-allocated by E.C.A.—where a certain amount of typhoon damage in December 1947 somewhat curtailed supplies —where short selling has been a factor —and where coconut oil has had every encouragement to resist the downward price trend of competing fats.

NOW just a word or two on the copra supply picture as it appears today. Philippine copra exports from January through April were 145,300 long tons, which is 44 per cent less than during the same months of 1948 and considerably smaller than the record of 357,000 tons which moved out of the P.I. during the first four months of 1947. It is estimated that the copra exports for 1949 will be about 700,000 tons, which includes 150,000 tons carry-over from last year, as compared with 488,000 tons during 1948 (typhoon damage) and about one million tons during 1947. It was anticipated that by June 1 copra would be offered much more freely than it has been, but apparently it is being held back by the producers awaiting higher prices, particularly on account of short sales. Furthermore, a report comes from the north about an insect pest called a leaf miner which is affecting copra production in several regions. Private services indicate there seems to be plenty of copra in the producing areas, but one thing that is a factor in holding up the price for nearby deliveries is that in the southern islands the rains were very early. Instead of making copra, which can always wait, the Philippinos are busy with corn planting. Later on, the production should increase considerably and a price drop can be expected.

Furthermore, E.C.A. will go slow on copra authorizations for the second and third quarter because of the high price of Philippine copra compared with the prices of other fats and oils. Copra authorizations for the second quarter were only about 15,000 tons against the usual appropriation of 45,000 tons per quarter. It may safely be said that the general consensus is that the trend of coconut oil prices is downward, and that prices perhaps $.02 or $.03 a pound under today's spot price levels are expected by buyers over the next 60 to 90 days. It is difficult, however, to visualize coconut oil prices under, say, $.12 per pound tank-cars f.o.b. West Coast or $.15 f.o.b. West Coast, if the excise tax is considered, by August or September. One factor to be considered is the 45-day lag in time between shipment of the copra from the Islands and actual production of the oil here. Copra vessels no longer maintain schedules on account of the shortage of cargo. All vessels are arriving from one to three weeks late, making it difficult for a crusher to figure on exact production schedules. Another, and perhaps equally important consideration, is the anxiety of West Coast crushers to crush California flaxseed at the earliest possible opportunity. Copra crushing normally falls off sharply during June and July. We are drifting a little into the subject of flaxseed and linseed oil, which is a major subject in itself. It is perhaps sufficient to say that a considerable quantity of West Coast crushing equipment will not be available for crushing copra between, say, early June and some time in August. California flaxseed is expected to be available in fair volume some time prior to June 10.

We have ploughed through the subject of coconut oil in a general way without once mentioning the other high lauric acid type oils such as babassu and palm kernel oils, palm oil and the small volume items for specialty uses such as tucum and muru muru oils. With your permission I should like to conclude with a general statement that my compâny is just as disturbed about the present copra and coconut oil situation as you probably are, and that we should like nothing better than to find ourselves in the position of importing copra for crushing and marketing the oil at some price which would permit us a processing profit. This can't happen, however, until the general price level of competing fats gets in line with present coconut oil prices, or in reverse, coconut oil prices based on copra prices, fall to a point where the product can be marketed competitively.

—— • ——

Role of Structural Groups

Naphthalene can be made to react with isopropyl alcohol and then sulfonated to produce triisopropyl naphthalene sulfonic acid. This type of compound, in which the water-soluble group is located more or less centrally, has excellent wetting properties for use in alkaline metal cleaning solutions, in acid pickling baths, in soldering fluxes, and as an antipitting agent in nickel plating. Sulfonates of this type have detergent properties but are not as strong in suspending power as soap. In other words, they have the chemical but not the colloidal properties of soap.

Other agents are made from oleic acid by condensing the fatty acid chloride with compounds containing amino groups. While the naphthalene sulfonates form films on metal, they do not appear to be as tightly held to the metal as those containing both (SO_2NH) and (COONa) groups. The latter apparently sticks to the metal, and the former, besides adhering to the metal, also fastens on to the CO group in the adjacent molecule. D. R. Swan, *Org. Finishing* 9, No. 1, 19-25 (1948).

Effect of SOAP on SKIN

By John A. Killian, Ph.D. and M. Elizabeth Marsh, Ph.D.*
Killian Research Laboratories

PART II

CHART II presents a summary of a series of experiments which, in the opinion of the authors, is the most crucial procedure for estimating the comparative effects upon skins of two or more soaps. Here again, soap A was utilized as the standard in tests of products B to F, inclusive. Five subjects participated in all tests of the standard and each of the 5 women took part in tests of one of the other 5 products.

The experimental procedure was the same as that described for the series of experiments in Chart I with this one exception. The experimental period was divided into two parts or series, as reported in the chart. Tests in the first series were continued until each subject had developed her maximum cutaneous reaction to soap A and to the other product under test. At this time, each subject's hands were reversed; the hand which, in the first series of tests, had been exposed repeatedly to soap A was immersed daily throughout the second series of tests in solutions of one of the other 5 products and the other hand was transferred from exposures to one of the 5 products, B to F, inclusive, to immersions in soap A. From the time of reversals of hands, the second series of tests were continued until all evidences of irritation of the skin, which had resulted from immersions in solutions of one of the other 5 products, had disappeared and did not recur during a subsequent week of exposures to soap A. Periods of daily immersions in soap A, which were necessary for complete healing of the lesions on the subjects' hands, prior to the beginning of the second series of tests, were rated as 3.0 (+ + +) reactions varied from 15 to 20 with an average of 18 days.

During the first series of tests, the 5 subjects showed variable rates of development of maximum cutaneous reactions to soaps B to F, inclusive. Hence, in order to simplify the construction of Chart II, the curve which represents the average scores recorded in tests of these 5 products has been limited to the last 12 days preceding the time of reversals of the subjects' hands. Within this period, all subjects exhibited on skins of their hands exposed to solutions of one of the soaps B to F, inclusive, reactions for which the daily scores rose from 2.0 to more than 4.0. However, throughout the entire period of the first series of tests, none of the subjects gave any visible evidence of irritant effects on skins of hands exposed to solutions of soap A.

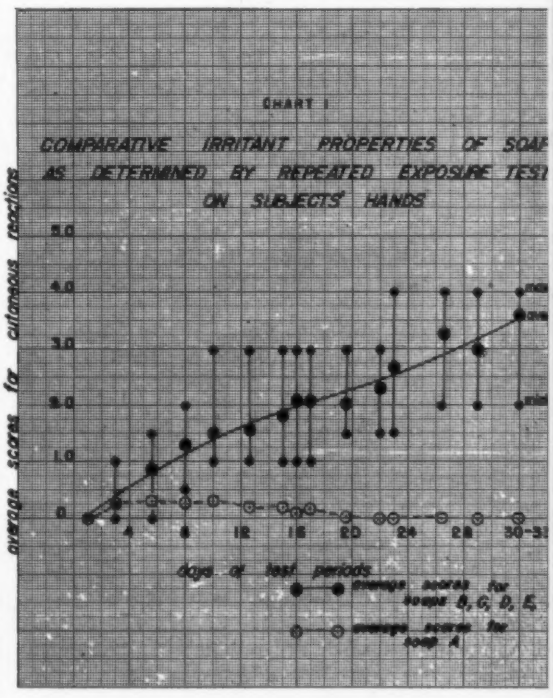
No visible changes in the conditions of either hands of the subjects were noted during the first days after reversals of the hands. Thereafter, however, hands immersed daily in solutions of soap A exhibited steady declines in both severities and areas of gross evidences of irritation of skins. The average curve indicates a complete disappearance of all visible signs of cutaneous reactions on these hands on the eighteenth day of repeated, daily immersions in soap A.

In contrast with responses of these hands to the standard soap, the subjects' opposite hands, which had been exposed to soap A during the first series of tests and transferred to exposures to one of the other 5 soaps under comparable conditions and during the same test periods, showed steadily increasing severities of irritation. After 24 days of exposures to these products, all subjects exhibited intense erythemas, excessive dryness, scaling, and excoriations of skins of their wrists, dorsal surfaces of their hands and fingers and in the interdigital spaces. At this time, total daily scores for gross evidences of irritation of the subjects' skins varied from 3.0 to 5.0.

Previous series of experiments in which the technic of repeated exposures was adopted but the 6 soaps were tested on a basis of equivalent concentrations, had demonstrated significant differences between the irritant effects of products B to F, inclusive, and the cutaneous reactions to soap A. These earlier findings are cited in order to rule out the relatively small differences between the concentration of soap A and the concentrations of the other products in their respective solutions, which were necessary to maintain equivalent detergent capacities, as the causes of the variations in cutaneous reactions as represented in Charts I and II.

The presence of the soil in solutions to which subjects' hands are

Chart I



* Reprinted from the Proceedings of the Scientific Section of the Toilet Goods Association, Inc., No. 11, May, 1949.

exposed is an important factor influencing the cutaneous reactions to detergents. Tests by the technic of repeated exposures of hands to soap solutions in the absence of soil show less rapid rates of development of visible evidence of cutaneous irritation than do comparable tests of the same products in the presence of soil. Although soil may accelerate the rate of development of cutaneous reactions, it does not affect the cardinal gross characteristics of skin irritation, viz., erythema, dryness, scaling and excoriation.

Another factor in the technic of repeated exposures which hastens the appearance of visible signs of adverse actions of soaps on skin is the intermittent immersions of hands in the solutions and exposures of the wet hands to air at room temperature. However, neither the soil nor the procedure of intermittent exposures to soap solutions and air, in themselves, were the causes of the irritations of the subjects' hands in test of products B to F, inclusive. The validity of this statement is evident from the fact that the standard soap, under identical conditions of testing, did not produce any gross indications of skin irritation.

For purposes of evaluating the relative mildness or, conversely, the comparative irritant properties, of toilet soaps, four modifications have been introduced into the procedure of repeated exposure tests as described in preceding paragraphs for household soaps. First, the period of each immersion has been limited to 10 minutes. Secondly, no soil is added to the soap solutions in which hands of subjects are immersed. The third modification concerns the concentrations of soaps in the solutions to which the skin is exposed. A concentration of 3.0 per cent of soap in water is used in all comparative tests except in those infrequent cases in which the presence of substantial amounts of nonsoap ingredients, e.g., builders, indicate the advisability of carrying out the comparative tests on a basis of either (a) similar detergent capacities or (b) equivalent concentrations of fatty acids. Finally, all soap solutions are heated to 40° C. at the beginning of each period of immersion. Apart from these four modifications, the method of testing toilet soaps is the same as that employed for household soaps.

Results of two series of experiments have been summarized in Chart III as illustrative examples of applications of the repeated exposure tests to problems of determining the comparative irritant properties of two toilet soaps. In both series of experiments, one soap, which is identified as soap II in the chart, was adopted as the standard.

The purpose of the first series of experiments was the determination of the relative mildness of two soaps which, on chemical analyses, showed similar percentage fractions of fatty acids. Tests of both soaps were carried out at concentrations of 3.0 per cent.

Results of preliminary patch tests on 151 subjects by the technic which has been described in an earlier report[5] demonstrated that neither soap was a primary irritant. Average total scores per subject for cutaneous reactions agreed within a range of ± 3 per cent.

Twenty subjects participated in comparative tests of the two soaps by the method of repeated exposures. Results of these experiments are summarized graphically in Chart III under the heading of "series I." Throughout the test period, including 10 days of immersions within 2 weeks, the average curves indicate identical scores for cutaneous reactions on 8 of the 10 days of examinations of the subjects' hands. Also, it will be seen that all average scores fall within limits of mild erythemas. Results of these

Chart II

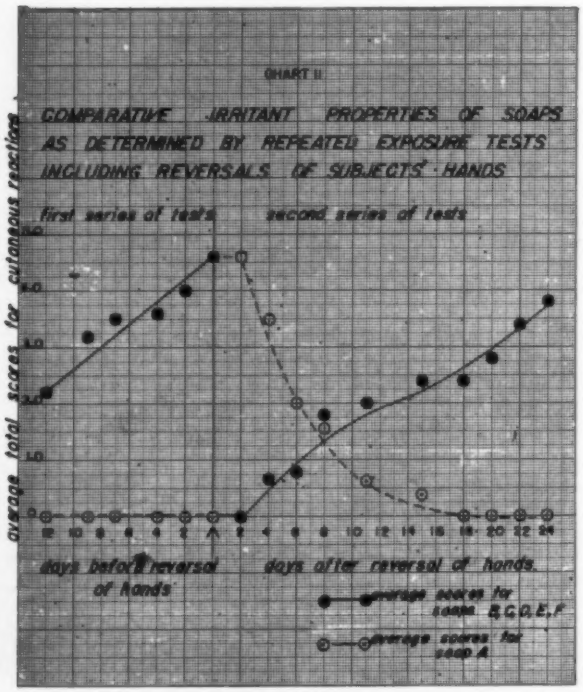


CHART II
COMPARATIVE IRRITANT PROPERTIES OF SOAPS AS DETERMINED BY REPEATED EXPOSURE TESTS INCLUDING REVERSALS OF SUBJECTS' HANDS
first series of tests
second series of tests
average total scores for cutaneous reactions
days before reversal of hands
days after reversal of hands
average scores for soaps B,C,D,E,F
average scores for soap A

Chart III

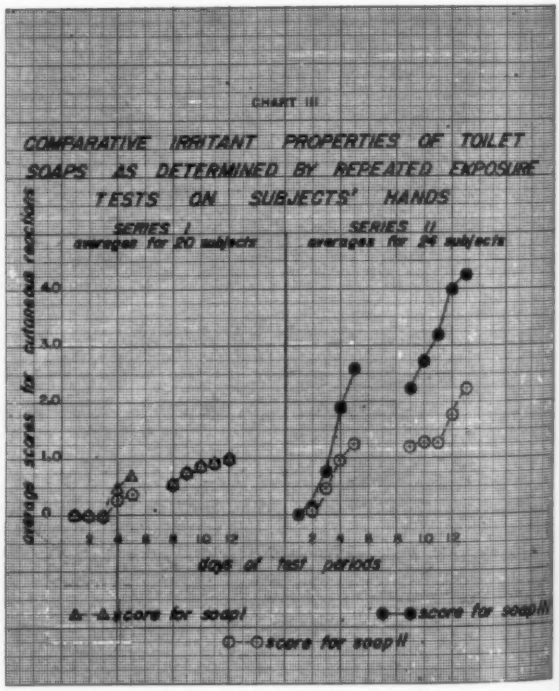


CHART III
COMPARATIVE IRRITANT PROPERTIES OF TOILET SOAPS AS DETERMINED BY REPEATED EXPOSURE TESTS ON SUBJECTS' HANDS
SERIES I
averages for 20 subjects
SERIES II
averages for 24 subjects
average scores for cutaneous reactions
days of test periods
score for soap I
score for soap III
score for soap II

repeated exposure tests are in good agreement with the findings of patch tests insofar as they point to the conclusion that both soaps are equally mild.

In the second series of experiments, the objective was the determination of the irritant properties of soap III compared to soap II as a standard. The principal difference between these two soaps in respect to their chemical compositions was the fact that soap III contained about 30 per cent more of the lower molecular weight fatty acids (C_{10} and C_{12} acids) than did soap II, but, in both soaps, the total amounts of fatty acids were approximately the same.

Duplicate patch tests which were carried out on a group of 75 subjects gave the results which are summarized in the tabulation shown at right.

Location of Patch	*Reaction to Patch Test*	*Number of Subjects Showing Reactions Per Cent of Total* Soap II	Soap III
Upper Arm	None	84	68
	+	15	21
	+ +	1	11
	+ + +	0	0
	+ + + +	0	0
Lower Arm	None	73	30
	+	15	45
	+ +	11	24
	+ + +	0	1
	+ + + +	1	0
AVERAGE TOTAL SCORES PER SUBJECT		0.64	1.18

Data presented in the foregoing summary confirm the conclusion stated in the authors' previous report in respect to the relatively greater reactivity of the skin on the lateral surface of the lower half than that of an anatomically similar cutaneous area of the upper half of the forearm.

Consideration of the cutaneous reactions to skin by soap II applied, in patch tests, to both areas of skins of forearms, points to the conclusion that the usual action of this product on normal skin is not that characteristic of a primary irritant because applications to the majority of subjects provoke no visible cutaneous reaction.

On the other hand, soap III, in tests on the same subjects and under the same conditions, did elicit cutaneous reactions in 102 or 68 per cent of the 150 areas of skin to which it was applied and, of these reactions, 35 per cent were graded as more severe and more persistent than mild erythemas.

Results of the comparative series of patch tests point to a significant difference between soap II and soap III in respect to their actions on skin. Whereas the former product elicited no visible adverse reactions in skins of about three-fourths of the subjects, the usual effect, i.e., the immediate action on the skins of the majority of the same subjects which resulted from topical applications of soap III, was that of a primary irritant.

Twenty-four subjects participated in the series of comparative tests by the method of repeated exposures to these two soaps. Average scores reported during both the first and second weeks of tests of soap II, as a standard, gave evidences of greater reactivities of skins of subjects who were utilized in the second series of experiments than those observed during the first series of experiments. It is possible that seasonal variations in susceptibilities of skin to actions of soap may have contributed, in a substantial measure, to these differences between the relative cutaneous reactions to this product because the first series of experiments was carried out in late Spring whereas the second series was conducted in late Fall of the same year. This hypothesis is supported by the fact that three women who took part in both series of experiments gave definitely higher scores for their cutaneous reactions to soap II in the Fall series of tests than they had shown during the experiments of the preceding Spring.

Comparative tests of soap II and soap III were carried out on a basis of equivalent concentrations of fatty acids in all solutions to which the subjects' hands were exposed.

Average curves for total scores for cutaneous reactions observed during the period of immersions show that, during the last 2 days of the week and throughout the entire second week, soap III produced more pronounced cutaneous reactions than did soap II. It is of interest to note that differences between total scores for the two products persisted during the interval between the fifth and ninth days of the test period.

Frequencies of cutaneous reactions of varying severities, which were recorded for the two products in examinations of the subjects on the last 2 days of the test period, are summarized in the following tabulation. These reactions are representative of cumulative effects of repeated exposures to the two products.

Cutaneous Reaction	*Number of Subjects Showing Reactions to* Soap II	Soap III
None	8	1
+	11	3
+ +	5	10
+ + +	0	10

In brief, during the final 48 hours of a test period, including a total of 30 immersions, 20 of 24 subjects exhibited cutaneous reactions to soap III which were graded as more severe than mild erythemas. On the other hand, only 5 subjects gave cutaneous reactions to soap II which were greater than mild erythemas and these were limited to moderate erythemas. The gross evidence which contributed most to the differences between the total scores for the two soaps were: (1) more intensive and extensive erythemas of skins on hands which were immersed in solutions of soap III than were observed on the opposite hands of the same subjects and (2) 50 per cent of the subjects exhibited scaling and fissuring of skins on hands exposed to soap III, but none of the subjects gave evidence of these effects on hands immersed in solutions of soap II.

Experimental Results

CONSIDERATION of results of tests by both the patch method and the repeated exposure technic leads to the conclusion that the usual effect of soap III upon apparently normal skins is significantly different from the usual effect of the standard soap II. The former product manifests, as its usual effect, a primary irritant action which is dependent upon its physical and chemical properties. However, since both products were tested on a basis of equivalent concentration of salts of fatty acids, in the solutions to which hands were exposed in repeated immersions, the indications are that this irritant action is not a resultant of or secondary to detergent effects per se of the soap III. Further, results of applications of solutions of soap III by means of patches attached to skin rule out detergency as the primary cause of the adverse action observed in patch testing because these static applications eliminate the mechanical forces which are essential for optimum detergency. Hence, it is evident that the irritant action on skin is a direct effect of soap III.

Initially, as the patch tests demonstrate, the direct action of a product of which soap III is an example affects primarily the vascular system of the skin in the area of contact. However, summation of these direct actions in repeated contacts involves secondary reactions extending to other skin structures, notably in the epidermis. These secondary reactions are manifest by gross morphological changes in skin which are characteristic of dermatoses.

In contrast with toilet soap III, topical applications of products A to F, which were included in the series of experiments summarized in Charts I and II, gave no indications of primary or direct irritant actions on skin. However, during repeated exposure tests, soap products B to F, inclusive, did exhibit adverse actions on skin. Although the solutions which were used in tests of the household soaps contained definitely lower concentrations of products B to F, inclusive (between 0.25 and 0.50 per cent) than did the test solutions of soap III (3.0 per cent), the gross manifestations of cutaneous actions of the former group of products were comparable in all respects with the signs of skin damage resulting from repeated exposures to soap III. Cumulative effects of these actions terminated in dermatoses.

Thus far in this report the use of the term "actions" has been limited to those effects of soaps which may be detected by visual inspection of skin. During the periods of development and utilization of the technic of repeated exposure, several attempts have been made and are being continued to supplement visual examinations of skin by other methods which might yield objectively determinable and, possibly, quantitative evidence of cutaneous reactions to soaps. Of all procedures which have been tried out to date, the one which gives the greatest promise of affording data of practical value is the method of determining skin surface temperatures in cutaneous areas which have been in contact with soap. For this purpose, a thermocouple, placed upon the skin's surface, is connected to a Micromax Temperature Recorder.

Table I presents a summary of records of temperatures of the skin on the dorsal surfaces of wrists, hands, and fingers of subjects participating in tests, by the repeated exposure technic, of household soaps.

Comparative temperatures of skins of right and left hands of 213 subjects were recorded before the beginning of the immersions in soap solutions. Mean results are reported for the two hands as the initial controls. These mean figures, which are in good agreement, indicate no difference between the two hands of a subject in respect to temperatures of their cutaneous surfaces. These findings justify the use of the skin of one hand as a control for purposes of evaluating changes in the cutaneous temperature of the other hand of the same subject.

As criteria of comparative effects of two soaps, skin surface temperatures were recorded at a time when gross visual inspections indicated that maximum cutaneous reactions had been obtained for one or both soaps. These records were made of skins of both hands at intervals varying from 2 to 3 hours after the preceding immersion in solutions of products under test. All of the results of studies of skin surface temperatures have been correlated with gross visible evidences of cutaneous reactions to the soaps in 4 groups.

The first group includes observations on 210 subjects who gave

(*Turn to Page* 133)

TABLE I

Comparative skin surface temperatures of subjects' hands in relation to severities of cutaneous reactions

Time of Recording Temperature	*Groups of Subjects*	*Number of Subjects Tested*	*Hand of Subjects*	*Severity of Irritation of Hands*	*Mean Skin Surface Temperature °F.*	*Standard Error of Mean*	*Student's t Test*
Initial Controls	All	213	Right	0	88.5	0.22	
			Left	0	88.6	0.23	
At time of Maximum Cutaneous Reactions	I	210	Right	0	91.1	0.22	
			Left	0	91.2	0.22	
	II	24	Either	0	90.7	0.69	1.88
			Either	+ +	92.5	0.66	
	III	20	Either	0	89.9	0.62	3.18
			Either	+ + +	92.7	0.62	
	IV	44	Either	0	90.3	0.46	3.41
			Either	+ + or + + +	92.6	0.47	

Canadian Soap Sales...

Dollar volume is up in 1947, while production falls below '46 figure

AN INCREASE of 39 per cent over the previous year's total value of soaps, washing compounds and cleaning preparations produced in Canada in 1947 was reported recently by the Dominion Bureau of Statistics, Ottawa. The annual report of the Bureau's department of trade and commerce, just issued, is available for 25 cents. The 1947 production of soap and related cleaning materials had a value of $53,200,468, as compared with $38,274,818 in 1946. The number of factories producing soaps, washing compounds and cleaning preparations also increased during 1947, when the total was 166, or 15 more than in the previous year. The number of employees rose from 3,219 in '46 to 3,262 in '47. Salaries and wages amounted to $6,804,806 in 1947, as compared with $6,213,581 a year earlier.

Total production of soaps declined in 1947 to 223,911,538 pounds from 231,593,088 pounds reported in 1946. The value at plants of the soap produced in 1947, however, was about $7,000,000 greater than in the previous year. Worth of soaps produced in 1947 was put at $34,528,533, as against $27,526,733 in 1946. Sales declined in 1947 to 218,543,684 pounds having a final (retail) sales value of $40,910,355. In 1946, sales of soaps amounted to 225,250,820 pounds, worth (at retail) $29,899,936.

Statistical data in the 1947 report are given in 12 tables covering, by provinces, number of employees and their salaries or wages; number of wage earners employed by months; fuel and electricity used; types of

Total production in Canada of soaps, washing compounds and cleaning preparations, 1946 and 1947

Item	1946 Quantity	1946 Selling value at works	1947 Quantity	1947 Selling value at works
	Pounds	$	Pounds	$
Hard Soaps—				
Bar laundry and household soaps—				
(a) Yellow	34,453,012	2,904,847	27,729,728	3,163,327
(b) White	13,588,437	954,239	10,039,851	1,098,819
Soap chips and flakes—				
(a) In household packages	23,317,815	2,989,082	20,636,139	3,463,394
(b) In bulk (except textile and mill)	20,543,263	1,840,816	16,529,411	2,174,062
Textile and mill soaps (including soap chips and flakes) (x)	4,308,159	434,902	3,342,270	466,253
Toilet soaps (except liquid)	36,590,879	7,093,987	37,879,159	9,128,628
Polishing and scouring soaps	275,009	27,771	215,333	26,818
Castile soaps—(a) Boiled	274,817	28,910	576,412	96,625
(b) Cold process	1,071,458	162,327	1,251,975	178,299
Soap powders—(a) In household packages	73,958,325	7,474,016	79,956,825	10,408,173
(b) In bulk	6,657,752	544,697	8,304,690	978,529
Shaving soaps—(a) Creams—Lather type	987,898	968,433	954,812	1,006,362
Brushless type	143,221	148,162	185,136	177,215
(b) All other	468,711	480,302	382,939	303,393
All other hard soap	156,750	17,041	197,200	22,241
Liquid soaps—Toilet	4,378,641	570,066	4,055,906	574,164
Other	4,619,831	511,885	5,932,088	722,285
Soft soaps	5,799,110	375,250	5,741,664	539,946
TOTAL SOAPS	231,593,088	27,526,733	223,911,538	34,528,533
Ammonia powder	2,970,610	137,837	5,482,300	290,497
Javelle water	...	2,281,116	...	3,248,994
Other washing compounds	...	546,730	...	579,049
Hand cleaner	...	364,099	3,363,891	386,049
Cleaning or scouring powders, pastes and cakes	...	2,096,904	23,818,467	1,959,651
Drain pipe cleaner, toilet flush, etc.	...	255,802	2,329,744	236,922
Other cleaning preparations, including lye	...	1,228,435	...	1,262,526
Sal soda	5,561,350	94,375	6,171,216	105,777
Chloride of lime	3,255,534	121,103	3,854,878	134,976
Glycerine (xx)	2,021,854	266,346	1,679,848	331,232
Glycerine, refined	10,251,539	1,666,448	9,414,446	2,756,743
Synthetic detergents	...	...	22,786,947	5,567,640

(x) Includes some liquid and soft soaps.
(xx) Some of the crude glycerine production was sold to refiners in this industry and appears again in the figures for refined glycerine.
Note: The above figures represent the total Canadian production of the commodities listed, regardless of the industries in which produced. Data for 1947 are subject to slight revision on further examination of the individual reports. Synthetic detergents are not included in 1946.

Principal statistics of the soaps, washing compounds and cleaning preparations industry, 1938-1947

Year	Number of plants	Average number of employees	Salaries and wages	Cost of fuel and electricity at works	Cost of materials at works	Gross selling value of products at works
			$	$	$	$
1938	109	2,273	2,942,456	374,195	9,224,150	18,241,985
1939	110	2,406	3,142,213	376,984	9,171,373	20,145,072
1940	110	2,649	3,585,884	431,887	10,081,240	20,855,880
1941	116	3,080	4,599,815	508,558	12,633,351	25,713,565
1942	126	3,268	5,490,076	586,716	17,424,418	31,484,125
1943	134	3,220	5,853,026	661,730	16,625,211	31,491,328
1944	138	2,996	5,354,142	604,910	17,497,145	33,120,521
1945	134	3,210	5,873,994	649,525	18,366,330	37,174,244
1946	150	3,219	6,213,581	645,786	18,268,952	38,274,818
1947	166	3,262	6,804,806	752,328	28,957,155	53,200,468
Per cent change 1947 from 1946	...	+1.3	+8.3	+16.4	+58.5	+39

Note: Profits or losses cannot be calculated from above figures as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

power equipment; materials used in manufacturing; types of products made; sales of soap by firms in the soaps, washing compounds and cleaning preparations industry, total production of soaps, washing compounds and cleaning preparations in 1946 and '47; imports and exports of soaps in '46 and '47. In addition, there is a four-page directory of firms in the soaps, washing compounds and cleaning preparations industry, which lists manufacturers by products.

Soap Powders for household use continue to be the leading type of soap produced and those having the greatest value. In 1947, production of soap powders for household use rose to 79,956,825 pounds, worth (at plant) $10,408,173 from 73,958,325 pounds. having a plant value of $7,474,016 in 1946. Toilet soap production and its value at plants also increased during 1947, as compared with 1946. In the former year, 37,879,159 pounds, worth $9,128,628, was turned out, as against 36,590,879 pounds, valued at $7,093,-987 in the latter year. The third most important soap produced in Canada in 1947 was yellow bar laundry and household soap, whose volume registered a rather sharp decline from the 1946 level and totaled 27,729,728 pounds, having a sales value at plants of $3,163,327, as compared with 34,-453,012 pounds, worth $2,904,847 in 1946.

In the miscellaneous category, cleaning and scouring powders had a total production in 1947 of 23,818,-467 pounds, worth $1,959,651. In the previous year, no figure was given for volume of production, but the worth was listed as $2,096,904. A newcomer in the miscellaneous products grouping are synthetic detergents, not previously listed, but shown as having in 1947 a production of 22,786,947 pounds, worth $5,567,640.

Production of soap chips and flakes in bulk, excepting textile and mill types, declined in 1947 from 20,-543,263 pounds, worth $1,840,816 for 1946, to 16,529,411 pounds, valued at $2,174,062. Liquid soaps, which are broken down into toilet and other types, were listed for 1947 as having been produced at the rate of 4,055,906 pounds, worth $574,164 against 5,932,088, valued at $722,285 in 1946. In 1946, liquid toilet soap production was 4,378,641 pounds, worth $570,066, and other than liquid toilet soap output was 4,619,831 pounds with a selling value at plants

(*Turn to Page* 133)

Sales of soap by firms in the soaps, washing compounds and cleaning preparations industry, 1947

	Quantity	Value of Sales (Final sales value)
	Pounds	$
Hard Soaps—		
Bar laundry and household soaps—(a) Yellow	27,204,968	3,270,556
(b) White	10,966,664	2,146,522
Soap chips and flakes—(a) In household packages	20,336,327	4,512,797
(b) In bulk (except textile)	16,585,136	2,463,500
Textile and mill soaps, all forms	3,493,683	525,288
Toilet soaps (except liquid)	31,658,227	8,500,509
Polishing and scouring soaps	416,004	53,757
Castile soaps—(a) Boiled	1,327,648	294,700
(b) Cold process	301,434	55,597
Soap powders—(a) In household packages	88,275,776	15,801,119
(b) In bulk (except textile)	7,580,087	1,287,962
Shaving soaps—(a) Creams (including brushless)	572,151	641,159
(b) All other	338,709	181,792
All other hard soap	186,330	20,597
Liquid soaps—Toilet	3,508,453	480,428
Other	3,936,992	469,469
Soft soaps	1,855,095	204,603
TOTAL SOAPS	218,543,684	40,910,355

SALT

By John R. Skeen

Market Research Dept.
Foster D. Snell, Inc.

ESSENTIAL to the production of the two major chemicals, soda ash and chlorine, the soap industry like most others depends upon salt for its existence. Salt is used directly in the recovery of glycerine, and in curing, pickling and preserving foods, etc. Except for short intervals, the supply of low-priced salt has been adequate for all domestic needs for over a century. While 65 per cent of the annual production is currently required by the chemical industry salt is a necessity in animal diet and so consumed in large amounts. A deficit of this fundamental raw material is most unlikely to occur.

The increase in production of salt from a level of nine million tons in 1939 to 15 million tons only four years later was due to military requirements for chemicals of all kinds for nearly all things. In this short time the manufacture of magnesium rose to 184,000 tons and the synthetic rubber industry was created. Salt was needed for both. To provide against a posible deficit, two defense plants were erected and the industry attempted to operate at capacity. However, strikes and an acute labor shortage hampered the attempt. In addition, transportation difficulties made distribution erratic and this factor was largely responsible for the inadequate supply which sporadically appeared. The industry attained capacity in 1945. Although several new plants have been erected since, the increased output is attributed to the expansion of sources controlled by chemical producers. Only one new plant with a capacity of about 300,000 tons is announced for this year.

Salt is nearly everywhere. It occurs as rock-like masses on the surface as well as at great depths, and in solution in wells, springs, inland playas, and in the sea. The quantities are astronomical. For instance, the Dead Sea is said to contain 11.4 million tons of salt, the content of the oceans would contribute a volume of about 4.5 million cubic miles. In the United States, the ancient sea bottoms have left large deposits in the Southwest; as rock, it underlies the surface in New York, Louisiana, Michigan, Kansas and Texas; great subterranean salt lakes are common to West Virginia and east Ohio and supply brine from deep wells. Very broadly, methods of recovery consist in the evaporation of sea or lake water, evaporation and crystallization of well brines, and the mining of rock salt. The chemical industry depends upon the direct use of brine while augmenting the supply with some of the evaporated product.

Earliest domestic manufacture was in Jamestown, Va. in 1613. This was done only for immediate needs in order to avoid the exorbitant price of British imports. Nearly 35 years later, Samuel Winslow commercialized the

(*Turn to Page* 129)

Salt: Supply, Price and Use*

Unit: 1000 short tons

		Production[2]				*Foreign Trade*[3]					*Use*[6]				
	Supply[1] *net*	*Total*	*Evap. (mfrd)*	*Rock*	*Brine*	*Imports*	*Exports*	*Producers*[4] *(no.)*	*Plants*[4] *(no.)*	*Price*[5] *$/ton*	*Soap*	*Soda Ash*[7]	*Chlorine*[7]	*Table & Household*	*Other Food*[8]
1916	6401	6363	2455	1368	2540	122	84	..	..	2.14		2050	..		
1918	7142	7239	2724	1684	2831	40	137	..	..	3.72		2400	90		
1920	6839	6840	2410	1610	2820	138	139	..	104	4.37		2150	..		
1922	6770	6793	2277	1947	2569	112	135	..	95	4.04		..	75		
1935	7866	7927	2330	1759	3718	51	112	60	74	6.940		4100	670		
1936	8803	8829	2540	2010	4280	51	77	58	72	6.957	40	4000	780		
1937	9218	9242	2580	2030	4632	46	70	59	73	6.823		5000	950		
1938	7999	8026	2429	1902	3695	40	67	63	79	6.823		..	1050		
1939	9200	9278	2659	2035	4584	46	124	67	81	7.2000		4850	1100		
1940	10243	10360	2783	2266	5312	30	147	66	83	7.200	36	4910	1289	494	1843
1941	12613	12721	3330	2619	6771	15	123	65	83	7.200	52	6228	1826	496	2077
1942	13583	13693	3518	2802	7373	8	118	64	86	9.559	41	6671	2203	685	2082
1943	15070	15214	3994	3259	7961	1	146	57	83	9.700	54	7158	2656	666	2272
1944	15525	15717	3943	3448	8326	6	198	53	81	9.700	77	7340	2865	603	2166
1945	15208	15394	3183	3506	8706	5	191	49	74	9.700	69	7087	2533	682	2107
1946	14913	15132	3249	3412	8471	4	223	50	73	9.700	64	6958	2387	708	2133
1947	15952	16138	3159	3754	9225	2	188	49	73	9.700	60	7467	2742	652	2110
1948	16050[9]	16400	3200	3820	9380	6	369	n.a.	n.a.		58	8050	2800		

* For an excellent historical review see *Salt The Fifth Element*, G. L. Eskew, 1948.

[1] Total production plus imports less exports.

[2] 1916-22: *Mineral Resources of the U. S.*, Bureau of Mines annual; 1935-46: *Minerals Yearbook*, Bureau of Mines; 1947: *MMS No. 1625*, ibid; 1948: unofficial estimate from incomplete reports; for description of production methods see Chemical & Metallurgical Engineer, Aug. 1940, p. 530.

[3] 1916-46: cited annuals, Bureau of Mines; 1947-48: Reports *FT 110* and *FT 410*, Bureau of the Census.

[4] Cited annuals, Bureau of Mines.

[5] 1916-22: average price, all forms as sold, Bureau of Mines, annuals; 1935-47: *Wholesale Prices*, Bureau of Labor Statistics, granulated, bulk, c.l., f.o.b. Chicago.

[6] Consumption by selected uses accounted for over 80 per cent of production 1940-47; for complete data, see Bureau of Mines annuals.

[7] 1916-22: error is not known but assumed to be great, estimations based upon production of products as reported or approximated, data intended only to show level of consumption for these uses; 1935-39 and 1948: estimations based upon production as reported or as estimated, accuracy believed to be within 6 per cent, see also *Chemical & Metallurgical Engineer*, Feb. 1937 for 1936 use distribution; "chlorine" embraces gas, bleaches, chlorates, etc.

[8] Includes meat packing, fish curing, dairy products, canning and preserving, livestock, and "other" food processing.

[9] Approximate only; unofficial estimates from incomplete reports (May 20) indicate very slightly greater production in 1948 than 1947, considering the indicated increase in chemical use, a significant decrease is indicated in other consumption.

ISCOOPERATION News

The Voice of
INNIS, SPEIDEN & CO.

117 Liberty Street, NEW YORK 6, N. Y. • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • GLOVERSVILLE • PHILADELPHIA

Plants: Niagara Falls · Jersey City • Subsidiary: E. S. Browning Co., San Francisco and Los Angeles

NEW YORK CITY, N Y. JULY 1949

ISCO WAXES CAN HELP YOU!

CARNAUBA WAX is produced only in Brazil from the Carnauba Palm, botanically known as Copernicia Cerifera, and is produced in seven different grades. Refined Carnauba Wax #3 N.C. is produced from the crude #3 North Country. It has a melting point of 82-84°C. Specific gravity is 0.995 (at 15°C.) and it is soluble in hot alcohol, ether, and alkalies.

Carnauba has properties that no other vegetable wax possesses due to its hardness and lustrous properties. It has many uses including shoe, furniture, floor, and automobile polish, phonograph records, carbon paper, inks, leather, electrical insulating compounds, waterproofing, and in the manufacture of water wax emulsions.

CANDELILLA WAX in Crude form is a product of Mexico, obtained from the Candelilla Weed. The weed grows in great abundance in the northern states of Mexico. It is botanically known as Euphoribia Cerifera Alcocer.

Isco Candelilla Wax is double refined to remove, as far as it is chemically and mechanically possible, the moisture, dirt and other foreign substances. It has an approximate melting point of 68/70° C., specific gravity of 0.983, soluble in chloroform, turpentine and Carbon Tetrachloride. It is used in many products, such as leather dressings, polishes — both paste and liquid, sealing wax, insulation compounds, paper size, paint removers, and waterproofing compounds.

MONTAN — Available in crude and powdered forms. M.P. 80-82° C. Soluble in carbon tetrachloride, benzol, chloroform, methylalcohol and hot petroleum ether. Used in manufacture of polishing preparations, waterproofing, records, insulating, paper sizing, wood treating, rubber and other similar applications.

OURICURY — This wax is obtained from palm leaves of the Cocos Coronata Martin Palm Tree in Brazil and has many interesting possible uses. It has a melting point of 82-84° C. and is used wherever Carnauba is indicated, except in emulsions.

CERESINE—white, yellow, and orange grades, with melting points ranging from 54°-70° C. Also known as cerin, cerosin, mineral wax or purified ozokerite, Spg. 0.915-0.933. Soluble in alcohol, benzol, chloroform and naphtha. Uses—manufacture of candles, shoe, floor and leather polishes, antifouling paints, wood polishes and fillers, paper size, waxed paper, lubricating compositions, figures and forms, toys, dolls, bottles for hydrofluoric acid; in electrical insulations; general size, impregnating and preserving agent; substitute for beeswax in crayons, perfume pastes, pomades, cosmetics, salves and other pharmaceutical products; matrix compositions in printing; printing forms; rubber mixtures; waterproofing textiles and cloth; textile dressing.

OZOKERITE—Available in white, yellow and hard green forms of various melting points, from 60 to 70° C. Spg. 0.910-0.970. Soluble in benzol, benzene, chloroform, turpentine, warm alcohol and carbon disulfide. Uses—manufacture of paints, varnishes, wood fillers, wood polishes, candles, lithographic and printing inks, dolls, toys, carbon paper, shoe polishes, pomades, cosmetics, pharmaceutical ointments, matrices in galvanoplastic work, crayons, waxed paper and cloth, linen and cotton sizing preparations, electrical insulating, leather finishing, lubricants, and sealing wax compositions; in process engraving and lithography; substitute for beeswax, carnauba, ceresin, electrotyper's wax; as rubber filler.

CARNAUBA WAX—Produced in seven grades from crude wax up to double refined #1 Carnauba flake. Noted for extreme hardness and high melting point. Exceptionally consistent in quality. Used in polishes, records, insulating, waterproofing, carbon paper and many other industrial applications. Readily emulsified, versatile, produces a high lustrous finish.

ISCO GUMS

Imported directly and processed in our own plant at Jersey City, N. J.

ARABIC — Amber sorts: Powdered and Grained

GHATTI—No. 1 and No. 2—Powdered

KARAYA—Powdered · Granular · Crude

LOCUST BEAN—Powdered

TRAGACANTH—Ribbon · Flake · Powder

TRADE NEWS

Lever Realigns Executive Organization

J. A. BARNETT T. H. RIDER W. H. BURKHART

THE appointment of two new vice-presidents, the formation of a planning committee and several other changes in personnel as part of a realignment of the executive organization of Lever Brothers Co., Cambridge, Mass., were announced recently by Charles Luckman, president.

James A. Barnett, vice-president and general manager of the Pepsodent Division of the company in Chicago, has been named vice-president in charge of advertising for Lever. William H. Burkhart, who has been director of manufacture, has been advanced to the post of vice-president in charge of manufacturing and traffic.

Named to the planning committee were Robert F. Elder, Arthur P. MacIntyre and Alexander B. Stewart. All three are vice-presidents, have long records of service with the company and are familiar with all phases of its activities. In addition to responsibility for long range planning, they will be given special assignments by the president.

Dr. Theodore H. Rider, formerly associate director of research has been named director of research, succeeding John W. Bodman, who has been appointed to the newly created position of chief development consultant to work on long-range product and process development.

"The growth of the company in recent years—the growth of its soap and edible business has almost doubled—has assumed such proportions that it was found necessary to separate planning from operations," Mr. Luckman stated.

The new vice-president in charge of advertising joined Pepsodent in 1943 as vice-president in charge of advertising, three years later becoming vice-president and general manager. Before joining Pepsodent Mr. Barnett was with the circulation, news and advertising departments of the New York *Herald Tribune* for seven years. He also worked for two advertising agencies for five years. He is a native of New Orleans and a 1931 graduate of Princeton.

William H. Burkhart, vice-president in charge of manufacturing and traffic, has been with Lever Brothers Co. for the past 10 years, successively as manager of its Baltimore plant, general manufacturing superintendent and director of manufacture. Previously he had been with Gold Dust Corp. and Hecker Products Corp., whose soap division was purchased by Lever Brothers in 1939. He was with Procter & Gamble Co., Cincinnati, at one time. Mr. Burkhart is a graduate of the University of Pennsylvania, where he received a B.S. degree in chemical engineering in 1921.

Dr. Rider became associate director of Lever Brothers Co. in 1947, after 10 years as technical director of the Pepsodent Division. Earlier he had been chief chemist and research director of William S. Merrell Co., Cincinnati, during which time he served on the faculty of Cincinnati College of Pharmacy. He is a Yale graduate, having taken his Ph.B. and Ph.D. degrees in 1925 and 1928, respectively.

Babbitt Markets "Swerl"

B. T. Babbitt, Inc., New York, recently completed arrangements with National Aniline Division of Allied Chemical & Dye Corp., to market its detergent, "Swerl." The product was formerly marketed by H. J. Heinz & Co., Pittsburgh. Babbitt also handles the liquid detergent, "Glim," which was acquired from the Antara Products, General Aniline & Film Corp., New York.

Charles A. Steneken Dies

Charles A. Steneken, 89, retired member of Steneken & Son, Hoboken, N. J., soap making concern, died at his home in West Orange, N. J., after a long illness. He was a graduate of Stevens Institute of Technology. The firm, which he headed before its liquidation 28 years ago, was founded by his father, Arend.

Shulton Promotion Plans

Shulton, Inc., New York, recently completed plans for a concentrated fall and Christmas advertising campaign to run in magazines and newspapers later in the year. The campaign includes 35 advertisements in 18 magazines and multiple insertions in 89 newspapers.

To Open Tex. Soap Plant

Young Soap Co., Philadelphia, will open a soap and chemical specialties plant at the former wartime Bluebonnet Ordnance Plant near McGregor, Tex. The company's bid for a former ammonium nitrate plant at Bluebonnet has been approved by the War Assets Administration.

David L. Countway Dies

David L. Countway, 54, former assistant to the president of Lever Brothers Co., Cambridge, Mass., and brother of Francis A. Countway, former Lever president, died June 17. He had been associated with the firm since 1918, having been a sales executive for 25 years and a member of the concern's Quarter-Century Club. Mr. Countway is survived by a sister and another brother.

Ryan Joins D. & R.

Daggett & Ramsdell, Inc., Newark, recently announced the appointment of Joseph P. Ryan as sales manager for the promotion of the organization's products in department, chain and independent drug stores. Prior to joining the Daggett & Ramsdell company, Mr. Ryan had been associated with Allen B. Wrisley Co., Chicago, as eastern sales manager.

Emery Names Two

Richard G. Kadesch recently was named research director for the Chemical Division of Emery Industries, Inc., Cincinnati, and at the same time it was announced that Dudley T. Moore joined the Chemical Divison of the company as senior research chemist.

Dr. Kadesch formerly was director of research and development for the Reynolds Metals Co., Gary, Ind., and from 1941 to 1946 he was senior research chemist for the organic research section of the Pittsburgh Plate Glass Co., Barberton, O.

Mr. Moore previously had been a member of the Stanford Research Institute, Stanford, Calif. and also had been associated with Sherwin-Williams Co., Chicago.

Markets Scrub Detergent

A new antiseptic, soapless, sudsing detergent, pHisoderm with three per cent hexachlorophene, providing surgeons with a two-minute preoperative scrub, currently is being introduced to hospitals and physicians by Winthrop-Stearns, Inc., New York.

The product is available in four container sizes. Gallon and 16-ounce bottles are provided for hospital use. A 10-ounce wall dispenser is intended for either hospitals or physicians' offices and a 3-ounce refillable hand dispenser is available for doctors and nurses.

AOCS Meets Oct. 31-Nov. 2

The 1949 fall meeting of the American Oil Chemists' Society will be held at the Edgewater Beach Hotel in Chicago, Oct. 31 and Nov. 1 and 2. C. E. Morris, Armour & Co., Chicago is chairman of the program committee. He is being assisted by H. T. Spannuth, Wilson & Co., Chicago.

A short course to be held at Urbana, Ill., Aug. 15-19 will be sponsored jointly by the American Oil Chemists' Society and the University of Illinois. A total enrollment of 175 is forecast for the course.

DCAT To Meet

Robert B. Magnus, Magnus, Mabee & Reynard, New York, chairman of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, recently announced that the 59th annual meeting of the DCAT will be held at Shawnee Inn, Shawnee-on-the-Delaware, Pa., Sept. 23 and 24.

Soap Men N. Y. Fund Aids

Alan N. Mendleson, president of B. T. Babbitt, Inc., New York, was recently appointed chairman of the soaps sub-division of the cosmetics division for the Greater New York Fund drive. George S. McMillan, vice-president of Bristol Myers Co., New York, heads the cosmetics and drugs group, another sub-division of which is the essential oils section whose chairman is J. B. Magnus, vice-president of Magnus, Mabee & Reynard, Inc., New York.

Boston BIMS Elect

Warren E. Johnson, U. S. Industrial Chemicals, was elected chairman of the Buyers, Importers, Manufacturers, Salesmen of Boston (BIMS) at a recent meeting of the group. He succeeds M. E. Nourse, Howe & French, Inc., who was made an honorary member. C. Ernest Ingham, Ingham of Boston, was reappointed to the executive committee. E. E. Aldrich, United Drug Co., was re-elected treasurer.

Three golf outings are planned for the year. The first was held at the Woodland Golf Club, Auburndale, Mass., in May. The other two will be held in August and September.

Reversing the usual order, the washing machine in soap, below, was a gift sent to all its dealers recently by Bendix Home Appliances, South Bend, Ind., makers of Bendix home washing machines. Even the package in which the castile soap model is packed closely resembles the standard home washer packing case.

Renderers Defend Fees On Foreign Fats And Oils

F. B. WISE, secretary-treasurer of National Renderers Association, Washington, D. C., comes strongly to the support of fats and oils import-export equalization fees proposed in legislation recently introduced into Congress. In a letter to *Soap & Sanitary Chemicals* taking issue with an editorial which appeared in the June number of this publication, Mr. Wise points out particularly that the equalization fee would operate only when domestic fats and oils are below parity. His letter states:

"It appears from the comments made in an editorial on Page 36 of the June issue that your publication is opposed to the fats and oils import-export equalizing legislation now pending in Congress; no doubt this reflects the position of the soap industry, which annually uses large quantities of imported fats and oils which would be subject to the "equalizing import fee" provided in the legislation whenever domestic fats and oils are below parity.

While the editorial specifically refers to the bill (H.R. 4538) introduced in the House by Representative Granger of Utah, it is apparent that your comments would likewise apply to the bill (S. 1594) introduced in the Senate by Senators Gillette and Wherry, which has essentially the same provisions. It is perfectly clear from the first paragraph or so of the editorial that you correctly understand that the proposed import fee is applicable at a rate equal to the difference between the average wholesale price of the principal domestically produced fats and oils and the average parity price for the same, *only when domestic fats and oils are below parity;* yet you state that you fail to see any merit in the proposals. Your objections to the contrary notwithstanding, domestic producers of fats and oils feel that the legislation contains much to commend it; at any rate, they regard it as no more than a 'fair deal' insofar as importations of fats and oils are concerned and are prepared to vigorously support its Congressional sponsors. No doubt you would be interested to know that there are many evidences of Congressional support for this legislation and in fact it is understood that Capitol Hill sources are already investigating the possibility of applying the principle to all agricultural commodities.

We believe the several potential complications which you say you see in the proposed legislation can easily be disposed of. In the first place, Department of Agriculture experts can surely compute parity for the principal fats and oils just as they now do for many other agricultural commodities. Secondly, neither the provisions of the bill nor domestic producers of fats and oils are—or should be—concerned with what is parity for coconut oil, or palm oil; certainly there is no intention to assure parity in any way, shape or form to these or any other foreign fats or oils produced under labor standards with which producers of this country can never hope to compete successfully. As a matter of fact, the objective of the legislation might be considered to be a form of compensation for these differences. In answer to your question as to what happens if the supply of negotiable warrants exceeds demands: Admittedly, this situation will cause the holder of the warrant to get out and find an export market for an equivalent amount of fats and oils; if he is unable or unwilling to do so, that merely is the privilege he must pay for importing foreign oils at a time when adequate domestic supplies are available.

In closing, may we express appreciation for your statement to the effect that "fat prices, chiefly tallow, grease, and lard, have been too low for six months"; we certainly agree that you have been consistent in this particular claim."

DuPont Issues History

The story of E. I. du Pont de Nemours & Co., Wilmington, is dramatically portrayed in a 54-page booklet currently being distributed to the company's 97,000 stockholders titled "This Is Du Pont." Interesting parallels between the company's development and the history of the United States are illustrated. A detailed analysis of du Pont's activities in the field of management, production and marketing is given and the company's role in the development of new products through research is described. The booklet is intended to provide a picture of the organization's present activities, with an indication of how these are related to past and future.

Harry M. Rubin Dies

Harry M. Rubin, 56, founder and president of the Long Island City, N. Y., soap making and fat rendering firm bearing his name, died June 3, at his home in Great Neck, New York. He founded H. M. Rubin Co. in 1913, four years after coming to the United States from Austria, at the age of 16. He was a director of the National Renderers Association and president of the Second Regional Renderers Association. He is survived by his wife, a daughter, a son, three sisters and three brothers.

Lord Leverhulme Buried

Viscount Leverhulme, head of Lever Brothers and Unilever, Ltd., was buried June 13 in the family vault at the village church in Port Sunlight, England. Lord Leverhulme died in Minneapolis May 26 while on his way to Cambridge, Mass., headquarters in the U.S. of Lever Brothers Co.

Shulton, Inc., New York, has just brought back its popular gift soap package, "Almonds of Fine Soap." Three almond shaped cakes packed in a terra cotta and white box, decorated with gilt almond blossom spray, retail for $1.50.

HERE is a simple, economical way to make soaps whiter and to assure whiter, brighter clothes. Just a little Koppers BMU added to soap chips, powder and bar soap whitens the soap and brightens the washed fabric without the slightest danger to the cloth.

The cost of the BMU required for each box or bar of soap is very low. Try BMU in your soap products.

A request on your company letterhead will bring you our technical bulletin and a sample of Koppers BMU for your own trial.

KOPPERS

KOPPERS COMPANY, INC. *Chemical Division* Pittsburgh 19, Pa.
Dept. SSC-7

Install Continuous Process

The chemical plants division of Blaw-Knox Co., Pittsburgh, last month received two foreign orders for the engineering and procurement of fat splitting plants. The Gouda-Apollo Co. (N. V. Vereenigde Stearin Kaarsenfabrieken) of Gouda, Holland, placed a contract for a plant of 33 tons per day capacity. The source of the other award was not reported but is said to involve an European buyer and calls for a plant with a daily production of 20 tons.

Both of the plants will use the Colgate-Emery continuous, high pressure fat splitting process which enables production of high yield industrial fatty acids.

Buys Skinner & Sherman

New England Spectrochemical Laboratories, Ipswich, Mass., has recently announced purchase of the outstanding stock of Skinner & Sherman, Inc., Boston analytical chemists and bacteriologists. Harvey J. Skinner, according to the announcement, continues as president. Herbert L. Sherman and Burton G. Philbrick remain as vice-presidents. William W. A. Johnson of New England Spectrochemical Laboratories has been elected treasurer. The two organizations will remain separate, although they will expand the scope of their services.

"Dial" to Grocers

The introduction of "Dial" soap in grocery stores on a national scale is taking place this month, according to a recent announcement by Armour & Co., Chicago. The new deodorant bath and toilet soap has been available in drug and department stores in many of the larger cities up until the present expanded distribution plan was put into effect.

Nat. Aniline Moves in Chi.

The Chicago office and technical service laboratory of National Aniline Division, Allied Chemical & Dye Corp., New York, recently was moved to room 964 in the Merchandise Mart. The division's warehouse remains at its present location, 357 W. Erie St.

Veale Resigns at Lever

The resignation of William R. Veale as vice-president and general manager of Lever Brothers Co., Cambridge, Mass., was announced recently by Charles Luckman, president. The post of general manager as a separate office has been abolished and from now on Mr. Luckman will act both as president and general manager of Lever Bros.

W. R. VEALE

Fred Schuster and Kenneth Warden, both formerly of Lever Brothers recently have joined advertising agencies. Mr. Schuster is now with Compton Advertising, Inc., New York, and Mr. Warden, formerly advertising manager of Lever Brothers, has been appointed vice-president of White, Berk & Barnes advertising agency.

Changes at Fitch

Changes in the operational setup and executive personnel of F. W. Fitch Co., Des Moines, following its recent purchase by Grove Laboratories, St. Louis, have been announced. Executive offices of the F. W. Fitch Division of Grove Laboratories, Inc., as the newly acquired unit is referred to, have been moved to the Grove main offices at 2630 Pine St., St. Louis. L. A. Smith, vice-president and comptroller of Grove, will be in charge of all manufacturing activities of the combined companies. Frank F. Bell is director of sales for all operations and A. S. Bland, Jr., is sales manager. Robert J. Piggott is advertising manager and Gene K. Foss merchandising manager. Fitch shampoo will continue to be sold under its present brand name, and will be made and shipped from plants at Des Moines, Bayonne, N. J., Jackson, Miss., Los Angeles and Toronto, Canada.

Issues Consulting Directory

The Association of Consulting Chemists and Chemical Engineers, Inc., 50 E. 42nd St., New York 17, recently has announced the 12th edition of its 132-page "Classified Directory."

Campbell Heads Williams

Charles S. Campbell, formerly vice-president, was recently elected president and treasurer of J. B. Williams Co., Glastonbury, Conn., when Everett B. Hurlburt, who held those offices since 1923, resigned from the company.

Ramsey Red Feather Aide

William H. Ramsey, director of radio for Procter & Gamble Co., Cincinnati, was recently named chairman of the radio committee for the 1949 Red Feather campaign of the Community Chest of America. He succeeds M. J. Roche, advertising director of Lever Brothers Co., Cambridge, Mass.

Five New Antara Detergents

Five new anionic foaming detergents, "Antarons L-135, L-177, N-185, L-114" and "R-275," were announced recently by Anatara Products, General Aniline & Film Corp., New York. They are alkyl amide sulfonates, and with the exception of "L-114," which is a gel, come in powder form. "Antaron L-177" is a more concentrated form of "L-135," which is a mixture of alkyl amide sulfonate and sodium chloride and is available as a light yellow powder. "N-185" is a similar product and comes as a buff-white powder with a slightly sweet odor. It can be used in metal cleaning. A light yellow gel, "L-114" may be used in most of the places that "N-185" is used. "Antaron R-275," a grey-white powder, may be used in metal cleaning with "Antarox A-180" for non-alkaline metal degreasing.

New Hardesty F.A.

"Palmitic Acid 80," a recently developed fatty acid of W. C. Hardesty Co., New York, is now being produced in commercial quantities at both Dover, O., and Los Angeles plants of the company, it was announced recently. The new acid has an 80 per cent palmitic acid content and an iodine value of 1½ maximum. It is light in color, heat stable and has high resistance to oxidation, according to the maker. Technical bulletins on the new fatty acid are available.

HERE'S A HANDY CHECK LIST OF ODORIZING SPECIALTIES

1. ALDAROMES—These are technical specialties expressly developed for manufacturers of sprays and other products containing formaldehyde and requiring effective masking. Available in a variety of odor effects.

•

2. BATH PERSTELS—For use in bath salts—more than fifty exquisite perfume-color combinations—eye-arresting pastel effects and subtle, irresistible fragrance. Convenient, economical, uniform, permanent.

•

3. *BASICOL—This aid to the soapmaker enables him to get better odor value for less money by replacing, in part, certain costlier essential oils and imparting an improved and more lasting odor to the finished soap. Geranium, lavender, lemon, neroli, pine and ylang are the types available.

•

4. *DUROFIX—Effects important advantages when used in perfumes for toilet soaps, liquid soaps and bath salts. A 10% or more replacement of perfume with the much less costly Durofix not only fixes the fragrance but actually intensifies and rounds it off. Checks perfume decomposition and eliminates soap stock odor. Durofix is offered in a large selection of odor types.

•

5. GERANIUM FOR SOAP #17835—A low cost, but extremely popular and very successful artificial geranium developed especially for competitively priced toilet soaps.

•

6. *JAVOLLAL—In most technical processes, one pound of this aromatic concentrate will replace from two to three pounds of Oil Citronella Java or Ceylon. It has a noticeably finer, cleaner and more attractive odor than citronella oil after incorporation in various mixtures, especially in soaps—solid, liquid or powdered. May be used alone or in combination with other mixtures.

•

7. *NEUTROLEUM—One of the most successful and widely employed deodorants and odor masks for technical products in use today. Highly effective in petroleum distillates, paints and lacquers, plastics, glues, polishes, cleaners' naphthas, sprays, insecticides and many others.

•

8. PARAPASTELS—Combined perfumes and colors for use in paradichlorobenzene and naphthalene, either melted or compressed. Covers unpleasant basic odor and imparts agreeable scent. Variety of combinations offered.

•

9. *SAFRELLA—An economical replacement for artificial sassafras in practically all technical processes. Same strength; odor difference very slight.

•

10. *SAVONAFIX—10% of this specialty added to a soap oil "freshens up" the floral character of the soap odor, counteracts any artificial note, supplies additional fixation and gives it a fuller, more lasting fragrance. Types available: Fougere, geranium, jasmine, lavender, oak moss and rose.

•

11. *TECHNOSCENTS—A group of powerful, low cost odor masking agents for use in various technical products—detergents, soap powders, cleaning fluids, cutting oils, solvents, etc.

•

**TRADE NAME REGISTERED OR APPLIED FOR.*

Address us on your letterhead for further particulars. Please specify what items you are interested in and their intended end-product use.

FRITZSCHE Brothers, Inc.

Est. 1871

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and *STOCKS: *Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati O., Cleveland, O., Dallas, Tex., Detroit, Mich., *Los Angeles, Calif., Philadelphia Pa San Francisco, Calif., *St Louis, Mo., *Toronto, Canada and *Mexico, D. F.*
FACTORY *Clifton, N. J.*

Soaps, Waxes Shown at Super Market Meeting

PLANS for promoting increased sales of soaps featured presentations made by four soap manufacturers at the Super-Market Institute's convention held in Chicago recently. Four chemical specialties companies also participated in the concentrated effort to build good will in the food store field.

Lever Brothers Co., Cambridge, Mass., in their "Business Building" booth, showed the latest ideas in wall and center island merchandise displays. General field manager, Richard Anthony, and his associates exhibited and explained a series of volume-building store promotions.

Procter & Gamble Co., Ivorydale, O., exhibited their full line of soaps and detergents, tied in with their national advertising program and conducted a guessing contest for which prizes included equipment for golf, fishing and hunting. Mark Upson, general sales manager, was in charge, assisted by C. W. Musset and H. W. Purcell, divisional sales managers; John Harris, Chicago district manager, and E. F. Arnold, Chicago.

Colgate - Palmolive - Peet Co., Jersey City, N. J., had an animated display of their household soaps and new synthetic detergents, with A. A. Lynn and a large staff of associates in charge. The prime objective of the Colgate representatives was to discuss mutual sales problems with the market men, thus making for better understanding and continued friendly relations with the supermarket operators, Mr. Lynn said.

Allen B. Wrisley Co.'s Chicago sales staff explained their special promotion for building volume with good profit on toilet soaps, packaged soaps and toiletries. Attention was directed to an electric fountain display for "Townley lemonated" shampoo.

S. C. Johnson & Sons, Inc., Racine, Wis., showed the model kitchens used in their magazine advertising for "Johnson's Glo-Coat" floor wax. Russell Griffith and Arthur Fisher were on hand to welcome visitors.

Oakite Products, New York, demonstrated the cleaning of silverware and the removal of iodine stains with their products and also told of their new 1949 mass display contest for which $1,500 cash awards are offered to super market operators for the most unusual ideas. Frank A. Conolly was in charge.

Wilbert Products Co., New York, presented their consumer merchandising plan designed to increase sales of floor waxes and household cleaners in super markets.

Boyle-Midway, Inc., New York, was another exhibitor with a display of their full line of household chemical specialties.

—— • ——

Lever Man on China

Harvey G. Duncan, far eastern advertising manager for Lever Brothers, said that British policy in China calls for business as usual with the Chinese communists. Mr. Harvey made this statement last month when he arrived at San Francisco aboard the S.S. President Cleveland. Mr. Duncan, who had spent the past year in China, said he could not predict what plans Lever Brothers would make, but that generally British firms have planned to stay on in Shanghai and in other trade centers in China.

—— • ——

Joins Ungerer Club

George R. MacDonald recently was admitted to membership in the "Quarter Century Club" of Ungerer & Co., New York, following completion of 25 years continuous service. He was presented with an engraved gold wrist watch by F. H. Ungerer, chairman of the board, as a token of appreciation. Mr. MacDonald is at present in charge of the company's west coast branch in Los Angeles, prior to which he was in charge of the Boston office.

—— • ——

Centflor Moves

Centflor Manufacturing Co., recently moved its laboratories and offices to 243 W. 67 St., New York. The warehouse and receiving department is at 248 W. 68 St.

—— • ——

P&G Man Elected

R. C. Head, Procter & Gamble Co., Cincinnati, recently was elected chairman of the Ohio Valley section, American Institute of Chemical Engineers.

One of the most recent soap companies to enter the home permanent wave field is Procter & Gamble Co., which recently announced "Lilt".

to your detergents . . .

add high Performance Quotient

with PQ silicates

Check how PQ Silicates improve the dirt-removing performance of your detergents and soaps. Then let us discuss your use of PQ Silicates to boost the PQ (performance quotient) of your products.

suds:	Soaps built with PQ Silicates produce more suds than with other alkalis; and a suds with life increased ten times.
soil removal:	Silicates increase the efficiency of soap in removing soil; e.g. in hard water at a concentration of 0.32%, soap alone removed 47.5% of soil from cotton whereas a mix of 40 "C" Silicate and 60 soap at the same concentration removed 66% soil.
deflocculating power:	Excellent suspending action by silicates on acidic or saponifiable materials. At a concentration of .01% silicates suspend three times as much ilmenite as soap.
preventing redeposition:	Silicates long have been recognized for their ability to prevent deposition or redeposition of dirt on a fabric or other material during agitation. No other materials at equivalent cost are as efficient.

PHILADELPHIA QUARTZ COMPANY, 1152 Public Ledger Building, Phila. 6, Pa.
9 plants: distributors in over 65 cities

PQ and "C" are registered trade marks

PQ SILICATES PQ **BOOST YOUR DETERGENT'S PERFORMANCE QUOTIENT**

Samuel Alsop Dies

Samuel Alsop, 55, president of Alsop Engineering Corp., Milldale, Conn., died July 7 in Madison, Conn. A native of Philadelphia, he established the present business in New York 28 years ago. In 1935, the main plant was moved to Milldale. Mr. Alsop's wife died three months ago.

Magnus in Mayoralty Race

Percy C. Magnus, president of Magnus, Mabee & Reynard, Inc., New York, recently announced his willingness to serve as a candidate in the New York City mayoralty election in November. His interest in becoming a candidate was announced at a luncheon of 40 New York business men at the Hotel Astor, New York, July 7.

Ford Wyandotte Chmn.

The election of E. M. Ford as chairman of the board of Wyandotte Chemicals Corp., Wyandotte, Mich., was announced recently. He will continue in his present post as president until Sept. 1.

Robert B. Semple, director of the general development department of Monsanto Chemical Co., St. Louis, has been elected president to succeed Mr. Ford.

Du Pont Reply to Suit

Crawford H. Greenewalt, president of E. I. du Pont de Nemours & Co., Wilmington, Del., recently issued the following statement concerning the civil suit filed in Chicago, June 30, by the U. S. Department of Justice against du Pont, General Motors Corp. and others, alleging violation of the Sherman and Clayton anti-trust laws:

"The Du Pont company emphatically denies that its relationships with General Motors and the other companies mentioned in the complaint have been either illegal or in any way detrimental to the interest of the United States.

"On the contrary, these relationships have served the public interest in a conspicuous way; and in that firm belief we will defend our actions and our present position with the utmost vigor.

"Since these relationships have been a matter of public record and public information for many years, the motive for this suit must arise out of the determination by the Department of Justice to attack bigness in business as such. We cannot believe that such a position is or will be supported by the American people because in the end it would increase prices, reduce living standards, and even weaken the national security."

SYNTHETIC DETERGENT LISTING

An up-to-date table of synthetic detergents compiled by J. W. McCutcheon will appear in the August issue of "Soap and Sanitary Chemicals". The detergents are alphabetically arranged by their trade names and are classified as to type, name of manufacturer, class and formula, principal uses, and approximate concentration.

Western Soap Advertising

A recent issue of *Western Advertising* contains an article titled "No Rings On Western Bathtubs" which discusses the advertising activities of western soap manufacturing firms.

Nopco Offers New Soap

A new completely water soluble soap, "Nopco Soap C," of low titre running about 15° C., is being offered by Nopco Chemical Co., Harrison, N. J. It is a fine, light tan powder, with 97 per cent activity and is said to be a valuable detergent for use with alkaline salts in the preparation of metal cleaning, floor cleaning and heavy duty compounds.

Grease and Tallow Census

Manufacturers in the grease and tallow industry shipped products valued at $305.7 million during 1947, according to preliminary figures recently released by the Bureau of the Census, Department of Commerce, Washington, D. C. This is an increase of approximately 425 per cent over the $58.2 million value of products reported by the industry in 1939, the date of the last census. Value added by manufacture in the industry during 1947 amounted to $119.3 million, an increase of 494 per cent over the $20.1 million value added in 1939.

Lever Coast Plans

Lever Brothers Co., Cambridge, Mass., reported to have acquired a site in Los Angeles for the construction of a $20 million plant for the production of soaps, synthetic detergents and some related items, recently let a contract to Pacific Soap Co., Los Angeles, for the manufacture of "Surf," a Lever retail detergent of the alkyl aryl sulfonate variety.

Monsanto Names Yeagley

Herbert W. Yeagley, who has been with the firm since 1942, was recently named manager of the Washington, D. C., office of Monsanto Chemical Co., St. Louis. The office has been relocated in the Rust Building, 15th and "K" Sts., N.W. Mr. Yeagley is a graduate of Alabama Polytechnic Institute and a native of Meridian, Miss.

Detergent Mfr. in Sublease

Brown Swan Chemicals, Inc., Newark, N. J., manufacturers of detergents and fine chemicals, recently subleased the one-story brick building at 68 Chapel St., Newark. In a simultaneous transaction the company has further subleased about one-third of the building to Up-State Chemical Co., a concern which produces similar chemicals and compounds.

Givaudan Has Reception

The annual spring cocktail party by Givaudan-Delawanna, Inc., New York, was given at the University Club, New York, recently. Host for the affair, which was attended by nearly 200 people in the perfume and cosmetic industry, was Andre Givaudan, who arrived in the United States a short while before.

A feature of the gathering was the presentation of color slides of the Delawanna (N. J.) plant, the New York office and the Geneva and Lyons, France, plants of Givaudan. Pictures of the Delawanna plant showed laboratory, production, analysis and blending facilities, with particular emphasis on the most recent additions to the plant.

Mr. Givaudan departed for Paris and Geneva a short time after the reception.

MACKENZIE DETERGENT CHEMICALS

STMPP

(Pronounced Stemp)

Sodium Tetra Meta Pyro Phosphate

$(NaPO_3)_4Na_4P_2O_7$ (pH 7.1)

A NEW AND VERY INTERESTING CHEMICAL FOR MANUFACTURERS OF

Synthetic Detergents
Lower cost
- Increased sequestering action
- Does not reduce wetting ability
- Easier and more complete rinsing

Soaps
Lower cost
- Increased sequestering action
- Phenomenally increased wetting ability
- Easier and more complete rinsing

Cleaning Compounds
Lower cost
- Increased sequestering action
- Greater stability in solution
- Easier and more complete rinsing

The unusual properties of this new glassy phosphate can more than double the overall detergency of your product.

Sodium Metasilicate (Pentahydrate)

Both Chemicals are Currently Available in Car Lots

ALSO

Compounds—from our own chemicals—for Blenders & Jobbers
- Dishwashing Compound
- Driveway & Kitchen floor cleaner
- Concentrated soap powders
- Streakless car wash & others

MACKENZIE LABORATORIES INC.

Front & Yarnall Sts., Chester, Pa.

Survey On Soap Use

"Laundry Equipment and Cleaning Supplies" is the name of a booklet issued recently which contains results of a survey conducted by the research department of Capper Publications, Inc., Topeka, Kans. Included is a section on consumer preferences for soaps and cleaners. The summaries contained in the booklet are based upon tabulation of 2,163 questionnaires on brand preference for soaps and cleaners used for washing, work clothes, women's hose, silks, rayon and nylon, woolens, dishes, pots and pans, stoves, refrigerators, sinks, bathtubs and washbowls, toilets, floors, woodwork, glass, dairy equipment and others.

The most outstanding shifts from a similar study made in 1946 were "Spic and Span's" move to the top of the list as the brand mentioned in the largest number of homes and "Tide's" popularity which was mentioned in 22.4 per cent of the questionnaires. "Tide" was recorded in 15 out of the 16 use-classifications mentioned in the questionnaire. "Oxydol," "Ivory" and "Dreft," all manufactured by Procter and Gamble Co., Cincinnati, also were mentioned in 15 out of 16 use-classifications.

The top three brands mentioned for cleaning dairy equipment were "Dreft," "Vel" and "Tide," all synthetic detergents. They received 42.6 per cent of all mentions. This represents a marked shift to this type of cleaner for dairy equipment, since the top three brands mentioned for this use in the 1946 study received only 29.7 per cent of the mentions, and in 1946 one of the top three brands was a soap product, "Oxydol."

Copies of the survey may be obtained from Capper Publications, Topeka, Kansas.

New U. S. Testing Branch

United States Testing Co., Hoboken, N. J., recently opened a branch in Denver, Colo. The laboratory is under the direction of Berry Duff.

Harry A. Spears Dies

Harry A. Spears, 61, chemist with Colgate-Palmolive-Peet Co., Jersey City, N. J., died suddenly at Muhlenberg Hospital, Plainfield, N. J., June 9. He had been with the company for 44 years and was a member of its Foremen's Club.

Lever Shifts at Edgewater

Frank S. Baker, superintendent of the Edgewater, N. J., plant of Lever Brothers Co., Cambridge, was recently named plant manager to succeed C. V. Serbell, who retired. Raymond E. Bass becomes plant superintendent.

Morgan Mathieson V. P.

Dr. D. P. Morgan was recently named vice-president and treasurer of Mathieson Chemical Corp., New York, succeeding Howard Berry, who has resigned preparatory to retirement. Dr. Morgan joined the firm in 1948 and has been vice-president in charge of the development department. Mr. Berry, who has been with Mathieson for 26 years, scheduled to retire on Apr. 1, 1951, will serve as a consultant to the management in the interim. Earlier Mathieson announced that Dr. Carl F. Prutton had been appointed director of operations of the company's plants and that Arthur T. Bennett, vice-president, had been placed in charge of the eight plants acquired from Southern Acid and Sulphur Co. R. B. Worth and J. F. Newell were named vice-presidents. Dr. Prutton joined Mathieson last year as director of research, of which he will continue to be in charge, and also supervise operations of all the company's plants.

Advanced by Monsanto

Dr. David H. Chadwick, who joined the company's phosphate division in 1946, was advanced to group leader in the research department of Monsanto Chemical Company's phosphate division, it was announced recently.

Safety Congress Oct. 24-28

The 37th National Safety Congress and Exposition will be held Oct. 24-28 in Chicago. Sessions on industrial safety are scheduled for the Stevens, Congress and Morrison hotels; traffic safety sessions at the Sherman; commercial vehicle meetings at the Palmer House and school, farm and home safety sessions at the Morrison.

Chem. Exposition Dates Set

The 22nd Exposition of Chemical Industries will be held in Grand Central Palace, Nov. 28 to Dec. 3, 1949. The exhibits will cover four floors and will include raw materials, machinery and finished products.

Named By Blaw-Knox

The Chemical Plants Division, Blaw-Knox Co., Pittsburgh, recently announced the appointments of Arne Olson as chief process engineer, and R. H. Hazlett as manager of the oil and gas department.

"Dif" Free Sponge Offer

Dif Corp., Garwood, N. J., recently announced a limited reissue of a free sponge with every two packages of the product bought. Promotion of the offer started early in May. It had been tried about a year ago with successful results, the company announced.

Fistere Mallinckrodt Head

Joseph Fistere, formerly vice-president and a director of the company, was recently elected president of Mallinckrodt Chemical Works, St. Louis, to succeed the late Arthur C. Boyston, who died May 10.

Bon Ami Profits Down

Bon Ami Co., New York, and subsidiaries during the first quarter of 1949 reported a net profit of $141,840, or 23 cents a share on class B stock, against $192,261 or 49 cents a share, last year.

SOCMA, MCA May Merge

A proposed merger of the Synthetic Organic Chemical Manufacturers Association and the Manufacturing Chemists' Association was discussed at a meeting of representatives of the two groups at Shawnee-on-the-Delaware, Pa., June 7.

Frost Joins Mathieson

As we go to press it has just been announced that Charles W. Frost, formerly vice-president of Prior Chemical Corp., New York, has joined the industrial chemical sales division of Mathieson Chemical Corp., New York. Full details will follow next month.

What do YOU look for in a Surface Active Agent

1 A white product?

2 A hard dry flake?

3 Absence of objectionable odor?

4 Copious initial foam for good stability?

5 Good cleaning action at all temperatures in any water hardness?

6 Fast, clean rinsing?

7 ***A substantial saving?***

THEN

PACTIVEX

is your Detergent

Pactivex, for most uses, is the best alkylaryl sulfonate yet developed. If you will submit fully the details of your problem, our Applications Laboratory will be pleased to supply suggestions and formulations. Or, if you prefer, we shall send samples and literature for your evaluation.

PUBLICKER INDUSTRIES INC.

NEW PRODUCTS DIVISION

1429 WALNUT STREET, PHILA. 2, PA.

RAW MATERIAL MARKETS

As of July 5, 1949

FAT and oil prices moved slightly lower during the past month. Tallow at 5⅞ cents a pound for the fancy grade is unchanged from a month ago. A year ago tallow was selling for 16½ cents a pound. Coconut oil is off ¼ of a cent per pound, as compared with its price on this date approximately a month ago. It is now quoted at 15½ cents a pound, crude basis, Pacific Coast. Copra has also declined in the last month, and is now listed at $160 a ton, as compared with $175 early in June. The price a year ago was $285 a ton, with coconut oil selling for 23 cents a pound.

Other oils, the prices of which receded from their June levels, were cottonseed, at 10½ cents, down ¼ of a cent; corn oil, 10⅞, off ⅛ths of a cent; soybean, 9 cents, one cent under the June price.

Peanut oil moved to 12¼ cents a pound, the fraction of a cent representing its advance from the previous month's price.

Speaking before the National Association of Purchasing Agents at its annual convention in Chicago, recently, C. C. Farrington, vice-president of Archer-Daniels-Midland Co., Minneapolis, stated that the supply of fats and oils for the next few years would be ample. As an illustration of our position on fats and oils, he pointed out that there has been a large increase in soybean production, an expansion in domestic flaxseed and linseed oil, gains in peanut oil production and an anticipated further increase in animal fat supplies.

Sufficient supplies of fats and oils to meet domestic needs for the remainder of the year based on present consumption patterns were seen in a recent summary of the oils and fats situation published by the U. S. Department of Commerce. In general, the situation seems to line up like this: Imports are off from a year ago, largely because of reduced amounts of copra and coconut oil coming in to the U. S.; exports are larger than in any other previous year, including the war years; domestic production for the remainder of the year will be about as high as last year, possibly higher, depending on the weather, with animal fat production, mainly from hogs, showing a substantial increase over 1948. Domestic consumption, which seems to be the key to the whole situation, is down from a year ago. Probably as a result of decreased domestic consumption, stocks of fats and oils are gradually resuming "normal" prewar proportions. On Mar. 31, they were two billion pounds, 500 million pounds more than on the same date a year ago. However, stocks declined 43 million pounds during March (probably for export), as against an increase of 31 million pounds in March, 1948.

Total output of fats and oils from domestic materials in the 1948-49 season was recently estimated by the Department of Commerce to be about 10,680,000,000 pounds.

Helping to bring 1949 production of fats and oils up to the 1948 level is the large output of animal fats predicted for the coming year. Cattle slaughter in May and April was well above the 1948 level, and the animals were said to be unusually heavy. Cattle slaughter is not expected to remain as high as it was last year, but hog slaughter in the rest of 1949 and in 1950 will be materially higher than a year earlier. Production of federally inspected lard in Jan.-Apr., totaled 66 million pounds, 18 percent above the same period in 1948, and preliminary data indicate an output about 10 percent larger than in May, 1948. Output of inedible tallow and greases in Jan.-Mar., was at least as large as the 549 million pounds produced a year earlier. Because of a change in the method of collecting data, an exact comparison is not possible.

The 1949 spring pig crop was estimated recently by the U. S. Dept. of Agriculture to be about 15 per cent larger than that of 1948, with the current crop put at 59,040,000. A larger fall pig crop is also expected. Last year's was 33,995,000 head, as compared with an estimated '49 fall crop of 37,000,000.

With supplies coming into better balance with demand and most fats and oils prices reduced accordingly, attention now seems to be focussed on legislative schemes to boost prices. It was thought that by this time the President would have invoked the two-cents-a-pound import tax on copra originating in countries other than the Philippine Islands. Opinion now seems to be that because of reduced supplies and production of Philippine copra the tax will not be invoked.

A bill to continue import controls over fats and oils until the end of this year was approved recently. The previous law lapsed June 30, and if not extended would have resulted in large shipments of flaxseed from Argentina, Mexico and Canada. Since the U. S. has large stocks of flaxseed, and the support price for 1949 is $4 a bushel, it was feared the government would accumulate even more flaxseed since the imported flax or linseed oil would have sold for less than $4 a bushel. The government is now unloading its huge stocks of flax, which it bought for $6, at $5.25 a bushel.

Although the household and mothproofing grades of naphthalene remain unchanged, the price of the crude has been reduced recently.

Price declines characterized the essential oil market with reductions listed for cedarwood oil, lavandin oil, patchouli, petitgrain and Canadian fir oil.

Antara Products
General Aniline & Film Corp.

Antara Extra

An Antara Products Publication

Detergents
Emulsifiers
Wetting Agents
Dispersants
Carbonyl Iron Powder

444 MADISON AVENUE NEW YORK 22, N. Y. JULY, 1949

Unusual Organic "Compound #3" Used by The Seymour Manufacturing Company as Nickel Brightener

Another example of the versatility of the many organic compounds offered by Antara Products, General Aniline & Film Corp., is the revelation made by The Seymour Manufacturing Company of Seymour, Conn., that an Antara product has been used successfully as a nickel brightener.

Known to Antara Products as "Compound #3", the product has been used for years in a number of intermediate processes. When The Seymour Manufacturing Company consulted Antara Products, "Compound #3" was suggested to meet their requirements for the particular type of organic compound they desired as an answer to their "Bright Nickel Process" problem.

The bright nickel plating, as developed and patented by The Seymour Manufacturing Co., with "Compound #3", now is accomplished economically with results that never before were possible.

Among the advantages of the Seymour Bright Nickel Process are: the deposited nickel plate requires no further finishing before chrome plating; base metals having acceptable finish may be bright nickel plated directly.

The Seymour Manufacturing Company points out that "Compound #3" makes it possible to bright nickel plate directly on fine grained copper. Wherever it is used, it gives perfect adherence to the base metals when they are properly cleaned. The company also has been able to chromium plate objects which have been bright nickel plated without removal from the original racks.

The Bright Nickel Process of The Seymour Manufacturing Company is but one example of the many uses to which Antara Products' unusual organic compounds may be applied. If you have a product or a process or problem for which you have not yet found the right answer, write Antara Products at 444 Madison Avenue, New York 22. Antara Products did it for Seymour. Perhaps it can be done for you.

Sees Bright Future for Detergent-Sanitizers

The detergent-sanitizer field has a bright future, Lee D. Callans, Assistant Sales Manager, Antara Products, told members of the National Association of Insecticide & Disinfectant Manufacturers, June 14th at the Hotel Drake, Chicago.

Five New Foaming Anionics Added to Antara Products Line

Five new foaming anionic detergents known as the Antarons have been added to the family of surface active agents of Antara products, General Aniline & Film Corporation.

The Antarons listed are alkyl sulfonated synthetic surface active agents with excellent wetting, emulsifying and dispersing properties.

Antaron L-135 is a white powder, soluble in water and electrolyte solutions, stable to acids, alkalis, and temperature change. It has a density of 0.54. Among the uses of Antaron L-135 are: most general cleaning operations, the washing of fine fabrics, the washing of woolens, the washing of fruits and vegetables, and dairy cleaning.

Antaron L-177 is a more concentrated form of Antaron L-135 with the same stability and solubility. It has a density of 0.76. It has uses similar to Antaron L-135.

Antaron L-135 and Antaron L-177 may be used in combination with ordinary soaps to improve their detergent action and to disperse insoluble compounds generally formed with hard water salts. Both products can be blended readily into liquid soaps.

Antaron N-185 is a buff white powder with a slightly sweet odor. This product is soluble in water, hard water and moderately soluble in electrolyte solutions. It is also stable to metal ions, boiling water, and on storage, and is moderately stable in acid and alkaline solutions. It is used as a foamer and dispersant for metal salt precipitates. It replaces soap for such uses as: upholstery and rug cleaning, shoe cleaning and detergent dispersant in white shoe dressing, detergent base for laundering, dishwashing, wall cleaning, or auto washing composition, and commercial woolens and fine fabrics washing.

Antaron L-114 is a light yellow gel. This product is stable in acids, alkali, hard water, metal ions, boiling water and on storage. It is also soluble in water and hard water and is moderately soluble in electrolyte solutions and ethanol. Antaron L-114 is similar to L-135 in its applications.

Antaron R-275 is a grey white powder. It is stable in hard water, metal ions, boiling water and on storage. It is also soluble in water, hard water, and electrolyte solutions. Its density is 0.57. Antaron R-275 may be used in metal cleaning with Antarox A-180, a non-ionic, for non-alkaline metal degreasing. It may be used as a wetting agent where acid or alkali stability are required, and also when combined with Antaron L-135 it may be used in wettable DDT powders. It is a good antispotting agent in film developing and is used in emulsion copolymerization of Buna S type synthetic rubber.

Further information on the Antaron family is available by writing Antara Products.

New Non-ionics Offered to Industry

Two new non-ionic detergents of the aromatic poly-ethylene glycol ether type, Antarox "A-400" and "A-480", are displaying versatility at low cost in many applications.

The fact that these two new detergents are practically odorless, makes them particularly valuable for the specialized demands made upon detergents today.

Antarox "A-400" and "A-480", because of their ether structure, are extremely stable in the presence of acids, alkalis, and electrolytes. Because they do not ionize, they will not form insoluble compounds in hard water. They do not easily decompose or separate and will withstand wide variations in temperature.

In addition to all these characteristics, their physical and chemical properties will not change over long storage periods.

Why don't you try these versatile materials?

FROM RESEARCH TO REALITY
GA&F
Antara Products
GENERAL ANILINE & FILM CORPORATION
444 Madison Ave.
New York 22, N.Y.

BIDS AND AWARDS

U.S.M.C. Chip Soap Bids

In a recent opening for miscellaneous supplies by the U. S. Marine Corps, Washington, D. C., the following bids were received on an unspecified quantity of soap chips: Swift & Co., Chicago, 8.59 cents; M. Werk Co., Cincinnati, 8.74 cents; Armour & Co., Chicago, 7.96 cents; United States Soap Mfg. Co., Philadelphia, 6.90 cents; Procter & Gamble Distributing Co., Cincinnati, 8.49 cents; Dickson & Munro Sales Co., San Francisco, 11.9 cents; Standard Soap Co. of Camden, Camden, N. J., $8.39 per hundred pounds; Old Dominion Paper Co., Norfolk, Va., 8.878 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 7.539 cents; Spazier Soap & Chemical Co., Santa Monica, Calif., 11.18 cents; Kamen Soap Products Co., New York, 11.9 cents; Tennessee Soap Co., Memphis, Tenn., 8.22 cents a pound and 7.34 cents a pound, alternate.

P.O. Scouring Powder Bids

Bids on an unspecified quantity of scouring powder were received in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., from: Atwood Manufacturing Co., Riverton, N. J., 8.75 cents a pound; Pal Products Manufacturing Corp., Brooklyn, 4.2 cents; Swift & Co., Chicago, 6.3 cents; Marjo Products Co., Chicago, 6.5 cents; Chemical Manufacturing & Distributing Co., Easton, Pa., 5.5 cents; Fischer Industries, Cincinnati, 6.49 cents; Kutol Products Co., Cincinnati, 7.5 cents.

P.O. Soap Powder Bids

The following bids were received on an unspecified quantity of soap powder in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.: E. F. Drew & Co., Boonton, N. J., 4.7 cents; Swift & Co., East Cambridge, Mass., 4.4 cents; General Soap Co., Chicago, 6 cents; Procter & Gamble Distributing Co., Washington, D. C., 5.72 cents; Pioneer Soap Co., San Francisco, 5.7 cents, 15,000 pounds only; Spazier Soap & Chemical Co., Santa Monica, Calif., 5.39 cents; Kamen Soap Products Co., Barberton, O., 3.6 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 5.567 cents.

Rust Preventive Bids

In a recent opening for miscellaneous supplies by the Aviation Supply Office, Philadelphia, the following bids were received on an unspecified quantity of rust preventive: Crystal Soap & Chemical Co., Philadelphia, item 1a, 7.7 cents, b, 8.98 cents, all or none; Dearborn Chemical Corp., item 1a, 6.34 cents, b, 6.6 cents; Nox-Rust Chemical Corp., item 1a, 6.4 cents and item b, 6.6 cents; U. S. Bray Co., item 1b, 6.3 cents; Battenfield Grease & Oil Co., item 1a, 6.36 cents, b, 7.34 cents; R. M. Hollingshead Corp., Camden, N. J., item 1a, 7.2 cents and item b, 10.04 cents; Houser Research Laboratories, item 1a, $1,813.30 lot and item b, $2,560.80 lot.

Auto Soap Bids

Bids on an unspecified quantity of automobile soap were received in a recent opening by the Post Office Department, Washington, D. C.: from: Peck's Products Co., St. Louis, item 1, 8.47 cents, 2, 6.99c, 3, 6.9c, 4, 6.55c; E. F. Drew & Co., Boonton, N. J., 1, 6.86c, 2, 6.06c, 3, 5.86c, 4, 6.55c; Clifton Chemical Co., New York, 1, 10c, 2, 9c, 3, 8c, 4, 5.76c; Trio Chemical Works, Brooklyn, 1, 15.8c, 2, 10.8c, 3, 8.5c, 4, 8.01c; Crystal Soap & Chemical Co., Philadelphia, 1, 13c, 2, 9c, 3, 8.75c, 4, 8.310c; R. M. Hollingshead Corp., Camden, N. J., 1, 14c, 2, 12c, 3, 11c, 4, 9.5c; Chicago Sanitary Products Co., Chicago, 1 and 2, 7.6c, 3, 7c, 4, 7.4c; Fischer Industries, Cincinnati, 1, 8.4c, 2, 7.6c, 3, 7.3c, 4, 7c; Knoxall Corp., Indianapolis, 1, 17c, 2, 16.5c, 3, 14.5c, 4, 14c; Bri-Test, Inc., New York, 1, 12c, 2, 9.2c, 3, 8.6c, 4, 8.1c; Curley Co., Philadelphia, 1, 11c, 2, 10c, 3, 9c, 4, 8c; Wilco Co., Los Angeles, 1, 10.65c, 2, 9.55c, 3, 8.6c, 4, 8.2c; Harley Soap Co., Philadelphia, 1, 7.25c, 2, 6.1c, 3, 5.55c, 4, 5.3c.

New Booklet on MBMC

Issuance of a new, 24-page technical bulletin describing the physical and chemical properties, uses, and chemical reactions of mono-tert-butyl-meta-cresol, was announced recently by the chemical division of Koppers Co., Pittsburgh. The compound's high phenol coefficient of 30-50 makes it valuable as a germicide in the compounding of disinfectants and other sanitizing products. A light colored liquid alkylated phenol which solidifies slightly below room temperature, mono-tert-butyl-meta-cresol (MBMC) closely resembles thymol in structure and undergoes most of the reactions typical of the lower alkylated phenols. A further use is as a preservative for protein and other materials attacked by bacteria and fungi. An infra-red spectrogram of Kopper's MBMC is included in the bulletin, along with commercial information on storage, handling and toxicity. A bibliography of references to technical and patent literature follows the section of the bulletin devoted to the various chemical reactions of the compound. Copies of the bulletin, No. C-9-130, are available on request.

Issue Price Catalog

Fritzsche Bros., New York, recently issued a comprehensive, 12-page price list on its line of essential oils, fixatives, tinctures and other perfuming materials.

Aluminum Soaps in Benzene

At infinite dilution of aluminum soaps in benzene, the units approach single molecules, with a strong intermolecular force which causes a rapid increase of viscosity with concentration. In concentrated solution, the aluminum soap molecules aggregate to form long fibrous micelles with fatty-acid chains extended sideways. Most solutions were initially birefringent and so possessed liquid crystalline structure. V. R. Gray and A. E. Alexander, *J. Phys. Colloid Chem.* 53, 9-23 (1949).

HELIOCRETE

A Schimmel Specialty

by

Offers the great beauty of the Heliotrope fragrance with none of the disadvantages of Heliotropin.

•

It is four times as strong and ten times closer to the natural Heliotrope fragrance with no chemical by-odor.

•

Stable against alkali, Heliocrete is excellent as a fixative.

schimmel

601 west 26th street new york 1, n. y.

NEW TRADE MARKS

THE following trade-marks were published in the June issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Bugrenade—This for filled and unfilled canister type bombs for dispensing insecticides, etc. Filed Mar. 29, 1946 by Bridgeport Brass Co., Bridgeport, Conn.

Advance—This for wetting and foaming agents. Filed Feb. 18, 1947 by Advance Solvents & Chemical Corp., New York. Claims use since May 1, 1946.

Mae-Son-Ete—This for combination cleansing and polishing floor preparations. Filed Dec. 4, 1946 by Mae-Son-Ete Co., Cleveland Heights, O. Claims use since May, 1931.

The following trade-marks are published in compliance with section 13 (a) of the Trade-Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

Persistophos — This for insecticides. Filed Feb. 24, 1948 by California Spray-Chemical Corp., Wilmington, Del. Claims use since Jan. 9, 1948.

Sponge-Away—This for animal insecticide. Filed Sept. 3, 1948 by William Cooper & Nephews, Inc., Chicago. Claims use since July 13, 1941.

Super Inksol—This for ink remover. Filed Jan. 10, 1947 by C. P. Hall Co., Akron, O. Claims use since Nov. 10, 1946.

National Sanitary Supply Association—This for sanitary and janitor supplies. Filed Aug. 2, 1947 by the National Sanitary Supply Association, Chicago. Claims use since July 5, 1945.

Drew Wetsyn—This for detergents for general use. Filed Aug. 15, 1947 by E. F. Drew & Co., New York. Claims use since Mar. 10, 1943.

Hawaiian Beauty — This for soaps. Filed Aug. 15, 1947 by Hawaiian Perfume & Soap Corp., Hollywood, Calif. Claims use since July 30, 1947.

Harley - Davidson — This for enamel polish and cleaner. Filed Aug. 16, 1947 by Harley-Davidson Motor Co., Milwaukee, Wisc. Claims use since 1934.

Metlbrite—This for metal polish. Filed Oct. 16, 1947 by Boyle-Midway, Inc., Jersey City, N. J. Claims use since Jan. 15, 1927.

Aloe—This for chlorophyll air fresheners for deodorizing rooms. Filed July 9, 1947 by A. S. Aloe Co., St. Louis. Claims use since 1860.

Snowhite — This for moth preventive and insecticide. Filed Aug. 4, 1947 by Reefer-Galler, Inc., New York. Claims use since Feb. 26, 1929.

Hampden—This for pine oil disinfectant. Filed Sept. 5, 1947 by Hampden Color and Chemical Co., Springfield, Mass. Claims use since 1904.

Velo — This for rodenticides. Filed Oct. 22, 1947 by Velodent Products Mfg. Co., New York. Claims use since Oct. 14, 1947.

Flush-O-Matic—This for chemical compound for cleaning and flushing liquid cooling systems of automobiles. Filed Jan. 14, 1948 by Industrial Research, Inc., Phoenix, Ariz. Claims use since Oct. 1, 1947.

Zeroderma—This for fungicidal solution for treating athlete's foot. Filed Apr. 12, 1948 by Casey-Aikens Pharmaceuticals, Kansas City, Mo. Claims use since Feb. 24, 1948.

Ar-Sulfe—This for rodenticides. Filed Apr. 30, 1948 by Dr. Salsbury's Laboratories, Charles City, Ia. Claims use since Nov. 19, 1947.

Lola—This for shampoo. Filed May 7, 1948 by Lola Durham, Dayton, O. Claims use since Mar. 1, 1946.

Calol—This for insecticidal carriers and solvents. Filed Aug. 7, 1948 by Standard Oil Co. of California, Wilmington, Del. Claims use since Apr., 1948.

Fluorium — This for whitening material for use in washing textiles. Filed Aug. 17, 1948 by Beach Soap Co., Lawrence, Mass. Claims use since Apr. 27, 1948.

Mothex—This for mothproofing liquids. Filed Sept. 11, 1948 by Roseth Corp., New York. Claims use since 1925.

"Willie the Wiper" — This for cloths for polishing, waxing and cleaning all surfaces. Filed July 12, 1948 by Ben Krieger & Co., Greensboro, N. C. Claims use since June 11, 1948.

Arvisol—This for detergent for cleaning glasses and beer systems. Filed Aug. 19, 1947 by Taylor Precision Mfg. Co., Rocky River, O. Claims use since 1939.

L-Bo Grease—This for household cleaner in powdered and liquid form. Filed Sept. 5, 1947 by Moore & Son, Tucson, Ariz. Claims use since June 30, 1947.

Spray Brite — This for liquid glass cleaner. Filed Sept. 24, 1947 by Spray Brite Co., Minneapolis. Claims use since Sept. 1, 1934.

Q—This for synthetic organic detergents. Filed Sept. 26, 1947 by Quaker Chemical Products Corp., Conshohocken, Pa. Claims use since May 1, 1928.

Flotilla—This for soaps. Filed Nov. 5, 1947 by Armour & Co., Chicago. Claims use since 1903.

Dustdown—This for liquid soap. Filed Oct. 13, 1947 by Fitch Dustdown Co., Baltimore. Claims use since Nov. 3, 1904.

R Royce Chemical Co.—This for general cleaning compound. Filed Dec. 10, 1947 by Royce Chemical Co., Carlton Hill, N. J. Claims use since July 21, 1936.

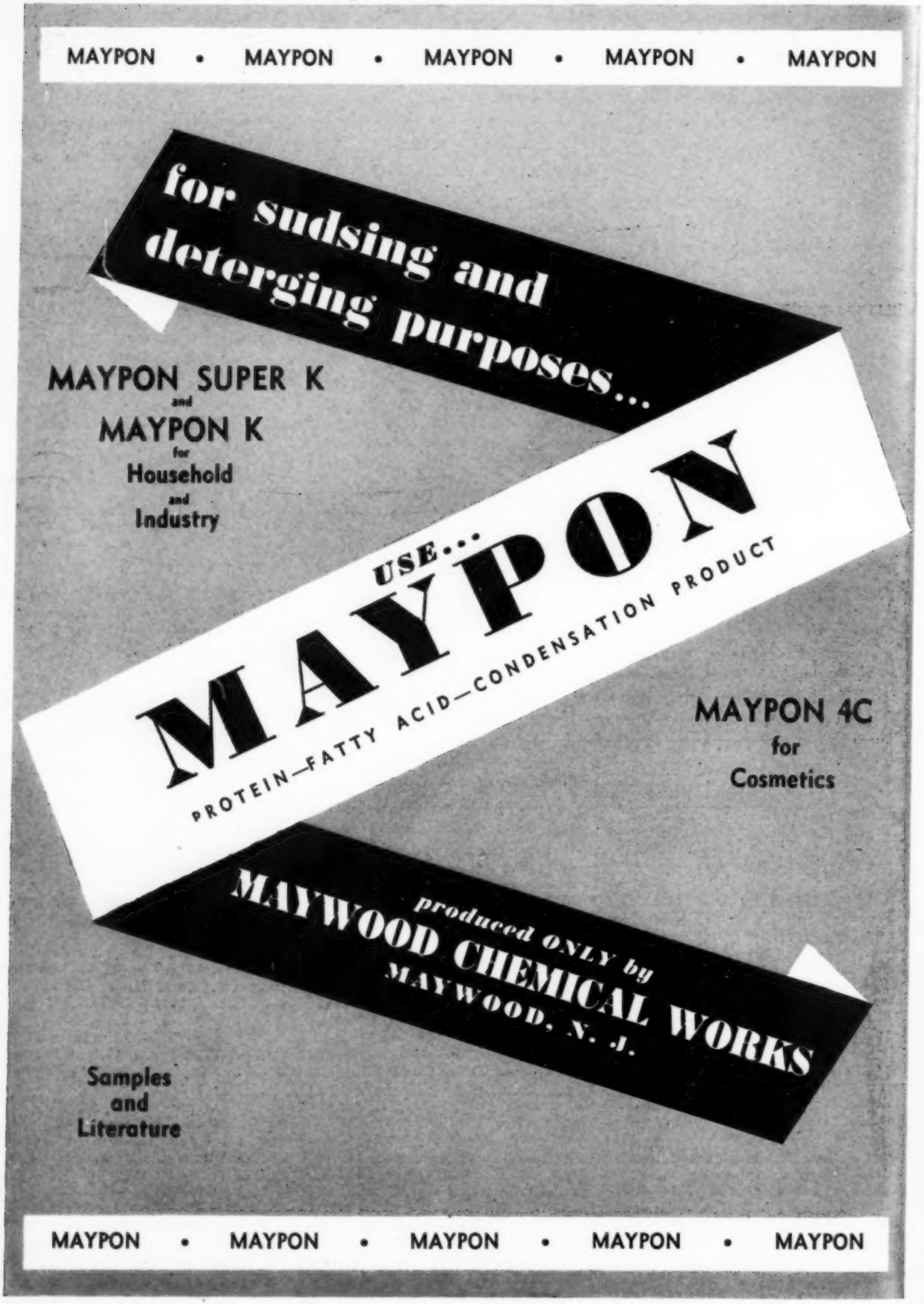
24-S—This for cleaner for dental plates. Filed Dec. 31, 1947 by Dr. West Co., Mora, Minn. Claims use since Oct. 15, 1947.

Chase - O — This for soluble cleaner. Filed Jan. 7, 1948 by Procter & Gamble Co., Cincinnati. Claims use since Aug. 1, 1912.

Detrex—This for metal cleaners. Filed Jan. 14, 1948 by Detrex Corp., Detroit. Claims use since Feb. 26, 1936.

Barry — This for soap. Filed Jan. 14, 1948 by Lanham & Kemp-Barclay & Co., New York. Claims use since May 10, 1922.

Pall Mall — This for sudsing


MAYPON • MAYPON • MAYPON • MAYPON • MAYPON
for sudsing and detergent purposes...
MAYPON SUPER K
and
MAYPON K
for
Household
and
Industry
USE...
MAYPON
PROTEIN—FATTY ACID—CONDENSATION PRODUCT
MAYPON 4C
for
Cosmetics
produced ONLY by
MAYWOOD CHEMICAL WORKS
MAYWOOD, N. J.
Samples
and
Literature
MAYPON • MAYPON • MAYPON • MAYPON • MAYPON

cleaner. Filed Jan. 17, 1948 by Hewitt Soap Co., Dayton. Claims use since Aug. 25, 1917.

Clena-Form — This for liquid cleaning agent. Filed Mar. 16, 1948 by College Pharmacy Products, Medford, Mass. Claims use since June 18, 1947.

Nacconol—This for detergents for use in metal cleaning. Filed July 9, 1948 by Allied Chemical & Dye Corp., New York. Claims use since Oct. 5, 1932.

Dohrco—This for floor wax. Filed Apr. 23, 1946 by Dohrmann Hotel Supply Co., San Francisco. Claims use since Mar. 1, 1928.

Kurfees—This for liquid paint brush cleaners. Filed Sept. 24, 1947 by J. F. Kurfees Paint Co., Louisville, Ky. Claims use since Jan. 1, 1907.

Klimate-Pruf — This for floor wax. Filed Nov. 10, 1947 by Klimate-Pruf Paint Co., Greensboro, N. C. Claims use since June 9, 1926.

Swax—This for cleaning and waxing preparation for walls, etc. Filed Mar. 4, 1948 by Carsolite Corp., Maywood, Ill. Claims use since July, 1947.

Klix—This for non-inflammable dry cleaning fluid. Filed Aug. 1, 1947 by Fleischer Mills, Inc., Cincinnati. Claims use since Apr., 1932.

Inland—This for cleaners for the surface of rubber articles prior to mending or patching. Filed Aug. 16, 1947 by Inland Rubber Corp., Chicago. Claims use since May, 1943.

Linda Lee—This for toilet soap. Filed Oct. 9, 1947 by Pitkin, Inc., Newark, N. Y. Claims use since Nov., 1933.

H. G. Vegetable—This for soap. Filed Jan. 31, 1948 by Armour & Co., Chicago. Claims use since Apr. 12, 1933.

Ficon — This for concentrated lathering synthetic detergent in liquid form. Filed May 26, 1948 by Fischer Industries, Inc., Cincinnati. Claims use since Feb. 11, 1948.

June Geranium—This for bath and toilet soaps. Filed Feb. 27, 1948 by Elizabeth Arden Sales Corp., New York. Claims use since Jan., 1917.

Colorsuds—This for soap. Filed Sept. 21, 1948 by H. Kohnstamm & Co., New York. Claims use since Aug. 31, 1933.

Blue Suds — This for washing compound. Filed Sept. 22, 1948 by Blue Suds Co., Detroit. Claims use since Aug. 12, 1935.

Spirco — This for cleanser for wood, cork, etc. Filed Sept. 22, 1948 by Walter G. Legge Co., New York. Claims use since July 6, 1948.

Trafco — This for cleanser for wood, cork, etc. Filed Sept. 22, 1948 by Walter G. Legge Co., New York. Claims use since June 4, 1948.

Hypo—This for moth preventive and insecticide. Filed Aug. 4, 1947 by Galree Products Co., New York. Claims use since Jan., 1930.

Strodex—This for chemical liquid or solid used as a detergent. Filed Apr. 27, 1948 by Dexter Chemical Corp., New York. Claims use since Nov. 15, 1946.

Deod-O-Matic — This for deodorant blocks. Filed June 14, 1948 by Puro Co., St. Louis. Claims use since June 4, 1948.

Foamkleen—This for emulsifying and cleansing agent for use with water for general cleaning purposes. Filed May 10, 1946 by Stedford Chemical Co., Fayetteville, N. Y. Claims use since Mar. 1, 1940.

A Good Market for Many Soap Makers and Chemical Firms

All Textile Mills with Dye Houses and all Dyers are Reported in Complete Detail

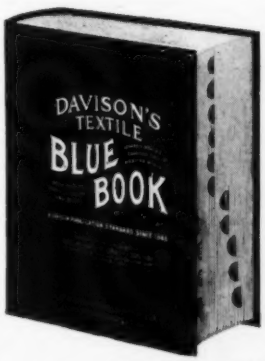
"An Authority in Textiles for Over Eighty-four Years"

THE NEW 84th YEAR TEXTILE BLUE BOOK is not new in a superficial way. It is new in the essential things that count in a complete guide to the nation's second largest industry—TEXTILES; new from cover to cover in all its more than fifteen hundred pages—new items and new mill reports—new information on some twenty-six thousand dealers in Allied Lines—new in up-to-date information on markets you can sell with profit—new in giving thousands of sources where you can save in buying. Old books are obsolete, expensive to use and unreliable, due to an enormous number of changes, all incorporated in

The New 84th Year Davison's Textile Blue Book*

*(Reg. U. S. Pat. Off.)

The large book in the office for circularizing, mailing, telephoning or reference, the small one for your salesmen or traveling executives, will pay their low cost in a few days!



DAVISON PUBLISHING COMPANY

"Standard Textile Publications Since 1866"

RIDGEWOOD Phone RI 6-3136 NEW JERSEY

Office Edition, $8.25
Handy Edition, not illustrated $5.75
Textile Directory for Salesmen, $4.50
Over 1500 Pages, Cloth and Gold with Thumb Indexes. New easy to read type in all reports

Detergency gets a "big boost"

with WYANDOTTE CARBOSE

Specialized grades of Sodium CMC

*Wyandotte Carbose** is a unique compound developed especially for detergent applications. When used in conjunction with both "built" and "unbuilt" detergent products, it boosts the cleaning ability of these products to a remarkable degree.

In the washing of cottons and other fabrics, with soils running from the lightest to the heaviest, formulations containing Wyandotte Carbose consistently provide more thorough soil removal and greater whiteness retention.

Carbose is also used in the production of improved water-base paints, textiles, paper and adhesives.

• This versatile compound is economically priced and is available in carload quantities. Write for complete data on its properties and applications.

*Reg. U. S. Pat. Off.

Wyandotte Chemicals Corporation
Wyandotte, Mich. • *Offices in Principal Cities*

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE • CHLOROETHERS
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

Wyandotte
REG. U. S. PAT. OFF.

Hydronate — This for surface active agents in powder and liquid form. Filed Mar. 3, 1948 by L. Sonneborn Sons, Inc., New York. Claims use since June 15, 1944.

Gay Blade — This for shaving cream. Filed Apr. 21, 1948 by Larkin Co., Buffalo, N. Y. Claims use since Apr. 2, 1948.

Vegokleen—This for shampoo. Filed Oct. 23, 1946 by Nopco Chemical Co., Harrison, N. J. Claims use since Sept. 4, 1946.

Ticknix—This for tick repellent lotion for horses and dogs. Filed June 17, 1948 by Innoventions, Inc., Paoli, Pa. Claims use since Apr. 9, 1948.

Green Light—This for insecticides. Filed Sept. 21, 1948 by Klauss-White, San Antonio, Tex. Claims use since Jan. 16, 1948.

Wetanscour — This for fatty acid condensate for wetting out and scouring textile fabrics. Filed Oct. 13, 1948 by Haas-Miller Corp., Philadelphia. Claims use since June 1, 1947.

"Linoleum Louie" — This for floor wax. Filed Oct. 10, 1947 by Gertz and Cook, Inc., Los Angeles. Claims use since Apr., 1947.

J. Riedweg Visits U. S.

Jacques Riedweg of Givaudan & Cie., Paris, was a recent visitor to the United States. He spent nearly a month here on his second visit since the end of World War II.

Siddall at C.I.A. Meeting

Kelly Y. Siddall, comptroller of Procter & Gamble Co., Cincinnati, presided at the midwestern spring conference of the Controllers Institute of America which recently met in Cleveland. Social security, federal taxation, break even points and depreciation were discussed.

Mr. Siddall has been a member of the Institute since 1938 and national director for the past nine years. He was elected president of the national group last October after serving as head of the Cincinnati local. He joined the Procter & Gamble organization in 1926 and was named comptroller in 1942.

C.D. & C.A. Spring Party

The Spring Party of the Chicago Drug and Chemical Association was held at the Palmer House, June 4. Walter R. Nay of Mallinckrodt Chemical Works was chairman of the entertainment committee for the affair.

American Can Sales Head

L. W. Graaskamp, general manager of sales for American Can Co., New York, was recently named vice-president in charge of sales. He succeeds W. C. Stolk, who was named executive vice-president. Mr. Graaskamp has been with the can company for nearly 30 years. In his new capacity he will direct all sales activities in the United States, Canada and Hawaii. He will continue to make his headquarters in New York.

Hooker Personnel Changes

Personnel changes recently announced by Hooker Electrochemical Co., Niagara Falls, N. Y., include the naming of S. I. Anderson as assistant to the general sales manager. He has been with the firm's sales department since 1933, and is responsible for eastern and western sales activities. T. H. Trimble, since 1934 a field salesman, is now eastern sales supervisor. Both men will make their headquarters in Niagara Falls. Neil H. Barber, with Hooker since 1941, has been reassigned to the area comprising eastern Pennsylvania and southeastern seaboard states.

Barrett*

CHEMICALS

FOR THE

SOAP AND DISINFECTANT INDUSTRIES

The health records of America show the vital part played by the soap and disinfectant industries. As a principal chemical supplier to these most important industries, Barrett maintains at all times the highest possible standards of quality.

Offers these Barrett* Standard Chemicals:

U. S. P. CRESOL
CRESYLIC ACID
U. S. P. PHENOL
TAR ACID OIL
NAPHTHALENE
PARACHLOROMETACRESOL
CHLOROXYLENOL
PYRIDINE
XYLOL
HI-FLASH SOLVENT
ANHYDROUS AMMONIA

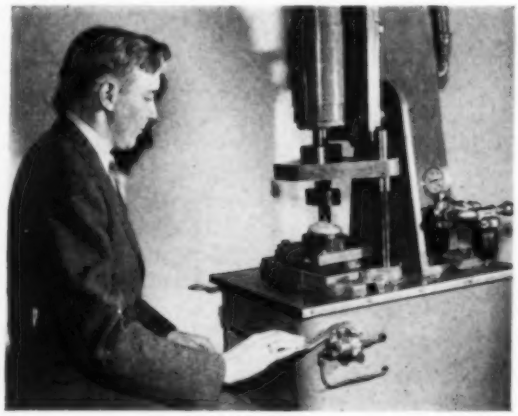
THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

*Reg. U. S. Pat. Off.

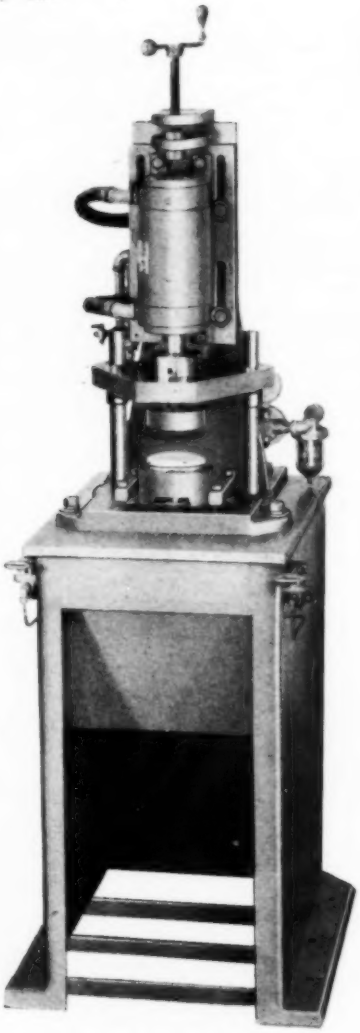
Houchin presents—
the NEW "SAFETY AIR PRESS"

(Trademark Reg. Pending)

Any kind of soap cake is pressed on this new safety air press at high speed with less exertion, and *with complete safety to the operators hands.*



BOTH HANDS MUST BE ON THE CONTROLS, BOTH OF WHICH MUST BE HELD DOWN SIMULTANEOUSLY IN ORDER TO ACTIVATE THE RAM. Note that in the illustration the press is inoperative because only one control is held down.



MODEL "A" SAFETY AIR PRESS*

**Patent Pending*

IMPORTANT FEATURES OF THIS MACHINE

1. **Single or multiple power strokes.**
2. **Any desired period of "dwell" under fingertip control by operator.**
3. **Presses soap cakes and other substances into perfect shapes, with well defined imprints.**
4. **Tough textured soaps are efficiently pressed, the desired ranges of density being attained by simple adjustments quickly made by the operator.**
5. **Pressures up to 2500 lbs. are available, on the "Model A" machine illustrated. Other models for pressures up to 10,000 lbs. available.**
6. **Air ram cannot move until both hands of the operator are away from the die and are placed upon remote dual air valve controls. Operator cannot block off one hand control and operate the press with the other hand. Press cannot function unless both right and left hand air controls are depressed SIMULTANEOUSLY.**
7. **Automatic lubrication air cleaner and other efficiency features assure easy maintenance and long service.**
8. **May be connected with your present compressed air lines, or we can provide a fully automatic electric compressor set.**

Write for full description and particulars of its labor-saving operation.

—Licensees and Manufacturers—

HOUCHIN
MACHINERY COMPANY, INC.

Manufacturers of Soap Making Equipment

FIFTH AND VAN WINKLE AVENUES — HAWTHORNE, NEW JERSEY

PRODUCTION SECTION

Shampoo Formulation

Although few synthetic detergents are currently used in shampoos, studies show they can be more widely employed.

ONLY a comparatively few of the many surface active agents available are actually used in hair cleaning preparations, according to a recent paper, "Shampoo Formulation" by H. W. Zussman of Alrose Chemical Co., Providence, R. I., presented before the annual meeting of the Society of Cosmetic Chemists, in New York, May 18. These few are primarily fatty acid soaps and fatty derivatives of the anionic type. However, the other classes of surface active agents could be applied just as easily with correct formulation.

One of the strongest objections to the use of surface active agents in shampoos is excessive drying and defatting generally associated with synthetics. That the synthetic detergents remove fats is not denied. However, it is to be noted that these fats are the waste excretions of the hair and skin and are also removed by soap.

The effect of synthetics on the skin is best exemplified by a concrete example. If the hands are washed with a concentrated C-12 alkyl aryl sulfonate solution, copious and viscous suds result which rinse easily and readily. The wet skin acquires a high degree of friction, so that it is difficult to pass one hand over the other. As the hands are dried thoroughly, the "normal feel" of the skin is restored. The coarse effect of the wet hands seems to be associated with an "ultra clean," grease-free skin. However, it should be noted that (1) the effect has been produced on the palms of the hands which have a relatively low excretion of fatty substance, (2) the short chain alkyl naphthalene sulfonates, which are poor emulsifiers and detergents, produce the same harshening effect, while, oleic acid soaps which are good emulsifiers do not "dry the skin," and (3), the same effect is not produced by real defatting agents, such as the organic solvents.

The harshened feel of the skin is similar to a condition familiar to the textile industry and termed "scroop." This term is used to describe the finish imparted to silk treated with an acid solution. The silk attains a high degree of friction and produces a crackling sound when it is rubbed against itself.

If after the detergent treatment, the hands are rinsed well with a dilute solution of sodium carbonate, a good lather may be worked up, and there is no revival of "scroop" even after a thorough rinsing with water. This seems to imply that "scroop" is due to an adsorbed layer of the surface active agent.

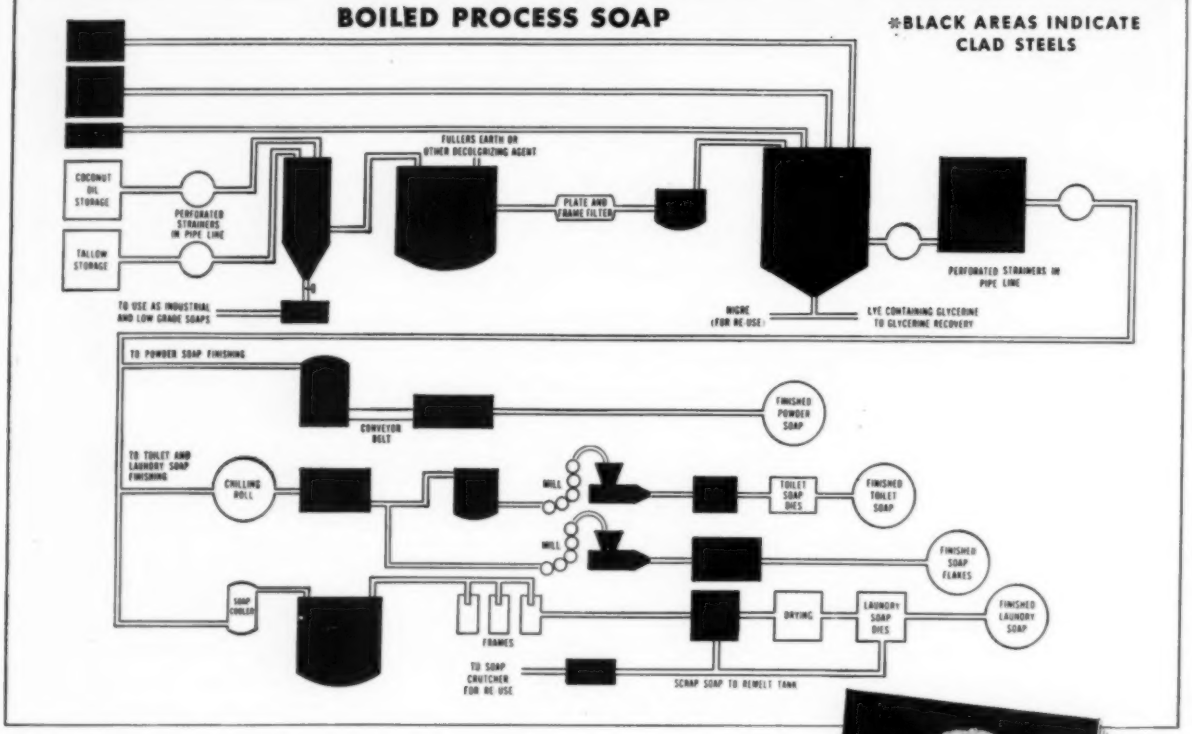
The anionic agents produce a pronounced "scroop" at acid pHs in the presence of an organic acid. However, the normal feel of the skin is restored on rinsing with dilute alkali. At pH 7, the quaternary ammonium compounds produce ridges in the palms of the fingers and at higher pHs, a mild "scroop" develops. The normal feel is restored on rinsing with dilute acid, "Scroop" is not associated with the non-ionic type compounds.

Textile technologists and biochemists have long been interested in the adsorption of surface active agents by proteins. The complex formations between the protein and surface active agent are based on the intrinsic affinity and electrotsatic forces. At its isoelectric point, the protein is electrically neutral; at pHs below the isoelectric point, it is cationic in nature and attracts the anionic type of detergent. At pHs above the intrinsic point, it is negatively charged and combines with the positively charged colloids, in which class are the cationic agents.

Adsorption studies of the anionic agents by wool indicate that the attraction of the protein for the anion increases with molecular weight. Steinhard, research department, National Bureau of Standards, noted that adsorption of anionic agents increased as the pH of the protein decreased; and the complex formation is reversible, i.e., dilution with water will remove the anion. Similar investigations by Aicken, Department of Textile Industry, Leeds University, England, confirmed the studies on adsorption and acidity, but his attempts to desorb alcohol sulfates with water were unsuccessful.

Investigations of soap adsorption by wool indicate preferential adsorption of the sodium ions, which

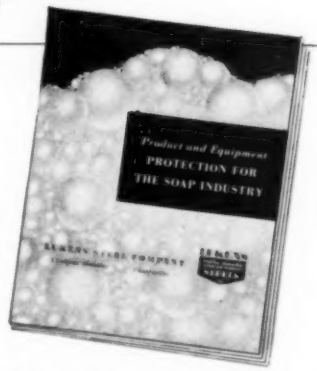
*Clad Steels** Assure Purity in Soap Making



Because soap products are comparatively low in price and highly competitive, more and more manufacturers are specifying Lukens Clad Steels. Product purity is safeguarded and equipment has long life.

Lukens Clad Steels—Nickel-Clad, Stainless-Clad, Inconel-Clad and Monel-Clad—are serving at many locations in the Soap Industry. A cladding 10% or 20% of total plate thickness, permanently bonded to ASME quality backing plate, provides protection equivalent to these *solid* corrosion-resistant metals at the lower cost of *clad* steels.

Suppliers of processing equipment are familiar with the advantages offered by Lukens Clad Steels. Many soapmakers have standardized on them wherever trouble with corrosion has been encountered or where they cannot risk product contamination.



This New Bulletin shows clad steels at work in the Soap Industry. Ask for Bulletin 492. Lukens Steel Company, 446 Lukens Building, Coatesville, Pa.

LUKENS
Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS

SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

behavior is in direct contrast to that of the neutral synthetic detergents. These studies seem to imply that the normal feel of the skin is due to an adsorption of the sodium ions.

AS A result of the various investigations on protein adsorption, the studies may be used to explain some of the shampoo problems and be applied to effective shampoo formulation. Possible points for consideration are: (1) Adsorption definitely affects the rinsing properties; the anionics rinse better at alkaline pHs, while the cationics rinse more easily at acid pHs. (2) Hair seems to be more difficult to manage after shampooing, primarily because of an increase in the coefficient of friction. This could be remedied by adjusting the pH. (3) Different surface active agents have variable lathering properties in the presence of fats. (4) Surface active anions reduce the "scroop" effect.

The scroop effect is associated with the lathering type of surface active agent, while the straight chain C-18 compounds do not produce the effect. The frictional properties of these compounds were recognized a long time ago when the theory of lubrication was developed. The long chain compounds have been known to have a more favorable effect on the lubrication than the short chain compounds used for shampooing.

Soap shampoos, especially the coconut oil shampoos, produce many favorable results in soft water which are not duplicated easily by the surface active agents. They yield copious and viscous suds, rinse readily and leave the hair in a natural condition. In hard water, the volume of lather decreases with increasing hardness, and calcium and magnesium precipitate on the hair as the alkaline earth soaps.

The lather may be protected by the addition of a sequestering agent, most typical of which is ethylene diamine tetraacetic acid. Tests indicate that a five per cent soap solution with .5 per cent sequestering agent will not lose lather volume or viscosity at 500 p.p.m. hardness. However, upon decreased dilution with rinse water, the sequestrant is diluted and also rinses out more readily, leaving the soap unprotected.

To retard the precipitation of calcium and magnesium salts during dilution and rinsing, the shampoo should contain a lime soap dispersant. A mixture of soap plus lime dispersant, however, does not show good lathering properties in hard water unless a sequestering agent is present.

Soap From Hydrocarbons

THE difficulties encountered in producing soap from hydrocarbon materials have been the high content of impurities, and the impossibility of separating unchanged hydrocarbons and partially oxidized products from the desired fatty acids. Undesirable odors therefore carried through to the final soap products.

In a new method, these disadvantages are avoided. Hydrocarbons are oxidized to oxygen-containing compounds but not to acids. Non-oxidized constituents are separated and fatty acids are converted to soap by reaction with fused alkali. Starting materials may be oil from brown coal with a boiling range of 200-350° C., cracked gasoline fractions with a boiling range of 200-325° C., or other hydrocarbon mixtures obtained from the hydrogenation of carbon monoxide. A high content of olefins may be used. For oxidation, the usual oxidizing agents are employed, including hydrogen peroxide, potassium permanganate, hypochlorite, oxygen, air, etc. Suitable solvents and diluents are glacial acetic acid, acetic anhydride, dioxane, acetone and similar materials. Unsaturated hydrocarbons can also be employed in aqueous emulsion. Fused alkali is introduced at a temperature of 250-300° C. The soap formed can be decomposed and the fatty acids distilled to separate impurities.

If the oxidation products or the fatty acids separated from them are heated at 300-400° C. with steam, fatty acids can be obtained which have no important difference between acid number and saponification number. The final synthetic fatty acids have small ester numbers, hydroxyl numbers, and iodine numbers, and can scarcely be differentiated from natural fatty acids. A. van der Werth, *Seifen-Ole-Fett-Wachse 74*, 299-300 (1948).

—♦—

Suspending Power

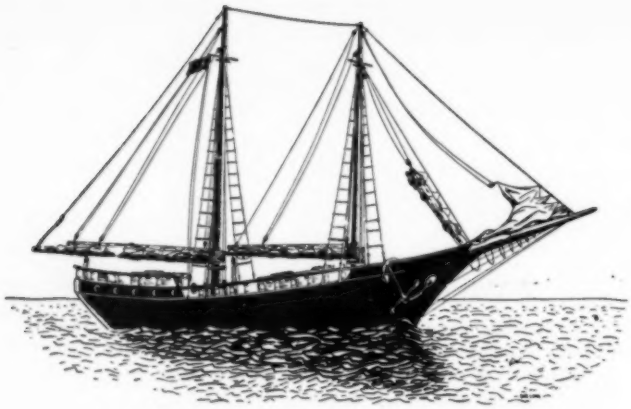
The suspending powers of various detergents were studied, using powdered manganese dioxide as the material to be suspended. Results were compared on solutions of anionic, cationic and nonionic synthetic detergents, sodium oleate, and para-toluene sulfonic acid. The nonionic detergent showed no suspending power. All the other substances showed a sharp maximum in the curve for suspending power against concentration at a low concentration.

Suspending power apparently is not related to solubilization or to colloidality of the solution except to the extent that formation of colloid effects the concentration of simple ions, but is probably to be explained in terms of ionic adsorption and zeta potential. Experiments with an improved sedimentation balance appear to show that the dispersing agents aid suspendibility by deflocculating the powder particles, which are associated by water into secondary aggregates of larger size than the primary particles in the dry powder. L. Greiner and R. D. Vold, *J. Phys. Colloid Chem. 53*, 67-87 (1949).

—♦—

Elaidinated Oils

The better keeping quality of elaidinated oils and fats are attributable to both physical and chemical causes. The more solid structure of elaidinated fats is the physical cause. Traces of selenium act as a strong antioxidation agent. The elaido configuration of the unsaturated acids, however, has been shown to be the principal factor in retarding oxidation. S. H. Bertram, *J. Am. Oil Chemists' Soc. 26*, 83-5 (1949).



Since the Days of the Trading Schooner...

Soapers have depended on WH&C ...for Raw Materials of Quality

CHECK YOUR NEEDS FROM THIS LIST

VEGETABLE OILS

Babassu, Castor, Cocoanut, Corn, Cottonseed, Olive, Palm, Peanut, Sesame, Soybean

ANIMAL FATS

Sperm Oil, Oleo Stearine, Lard, Grease, Tallow, Lanolin, Neatsfoot Oil

FATTY ACIDS
MINERAL OILS
PETROLATUM
ALKALIES
and other chemicals
STARCH and SOURS
SILICATE OF SODA "METSO"*
**Reg. U.S. Pat. Off., Phila. Quartz Co.*

QUADRAFOS
granular and beads. A stable polyphosphate for water conditioning and mild but effective detergency.

AIR DRYETTES
CALCIUM CHLORIDE
THE MAYPONS
Unique surface active agents; prolific foam; high detergency and emulsifying powers: suitable for cosmetic and industrial use.

SINCE 1838, we've been supplying the nation's "soapers" with basic raw materials—everything from Acid oils and Adeps Lanae to Waxes and Wetting agents.

If you need one drum in a hurry—or carloads on contract—give WH&C a ring. You'll probably enjoy doing business with this 110 year old organization . . . a firm that believes in applying the Golden Rule to *business* as well as to private life.

Let us mix your dry private formulas

Welch, Holme & Clark Co., Inc.
439 WEST STREET NEW YORK 14, N. Y.
Warehouses in New York and Newark, N. J.

Identification of Synthetics

THE definite identification of a surface-active agent is almost a hopeless task; it is easier to assign the product to a group. If the agent is contained in a mixture such as a scouring powder or shampoo, it is advisable to extract it first with alcohol, evaporate the alcohol, and use the residue in the following scheme. About 30 mg. of solid are dissolved in 1 ml. of distilled water. This solution is divided into two portions. One is boiled with 20° hard water, and the other with 3 ml. of 5 per cent acetic acid. If decomposed in both cases, it is a soap or a sulfonated oil.

If the original alcohol residue is ashed, only the ash from a sulfonated oil will contain sulfate ions. If the substance is still unidentified, dissolve a further portion in 3 ml. of water and add a drop of concentrated hydrochloric acid. A pronounced turbidity indicates a highly sulfonated oil, or a protein fatty acid condensation product. The latter gives the biuret reaction, while the former does not.

If the material is still not classified, a further portion is disolved in 2 mg. of distilled water, and 5 ml. of concentrated hydrochloric acid are added. The whole is boiled 3 times and allowed to stand 2-3 minutes between boilings. Finally, it is poured with stirring into 10 ml. of distilled water. A turbidity indicates a naphthalene sulfonic acid or an alkyl aryl sulfate. Copper sulfate solution gives a precipitate with a solution of the latter, but not with the naphthalene sulfonic acid.

If it is still unclassified it may be a substituted amide or a nonionic detergent. The former responds to a Lassaignes' nitrogen test and also gives an ash containing sulfate. The latter should leave no ash.

While this scheme is useful, it cannot be considered foolproof, or as definite as the system of group analysis for metals. G. V. James, *Soap, Perfumery, Cosmetics* 22, 491-2 (1949).

Spectrochemical Analysis

Application of the line-width method to the spectrochemical analysis of oils and fats, in conjunction with the use of an improved ashing technique, permits quantitative determination of copper, iron, manganese, nickel, and tin in amounts as low as one part in ten million. R. T. O'Connor, D. C. Heinzelman, and M. E. Jefferson, *J. Am. Oil Chemists' Soc. 25*, 408-14 (1948).

Oil-in-Water Emulsions

An investigation has been carried out on emulsions of an aqueous phase containing sodium laurate and an oil phase of cyclohexane and liquid paraffin containing mono-olein. More stable emulsions are obtained by using the two emulsifying agents than with either one alone. The relative amounts of the two emulsifying agents, the phase-volume ratio, the viscosity of the oil phase, and the method of dispersing one phase in the other, all play a part under any given conditions. By varying one or other factor it is possible to obtain either oil-in-water or water-in-oil emulsions over a considerable range of phase-volume ratios. W. Dickinson and J. Iball, *Research Supplement 1*, 614-17 (1948).

Palm Oil Composition

Palm oil was allowed to cool slowly to 12°C., pressed, and the fractions were purified. The solid fraction was composed of 1.32 per cent of myristic acid, 47.73 palmitic, 5.6 stearic, 39 oleic, and 6.35 linoleic; the liquid fraction was composed of 2.44 myristic acid, 27.13 palmitic, 5 stearic, 52.5 oleic, and 12.43 per cent linoleic acid. The liquid fraction was 66 per cent of the whole. M. Servant and G. Valantin, *Oleagineux 4*, 16-21 (1949); through Chem. Abs.

Soap Gels in Solvents

Addition of normal aliphatic alcohols accelerates the syneretic process of sodium oleate gels in pinene, while isoalcohols retard it. Alcohols increase the opacity during sol-gel transformation of sodium oleate-ethyl alcohol-water systems in the order varying from methanol to normal amyl alcohol, the latter having the greatest effect. Addition of the palmitates and stearates of calcium, barium and a number of heavy metals, accelerates the setting process of alkali soap gels in pinene. The per cent acceleration is greater with a stearate than with a palmitate. Change in setting time is related linearly to the atomic weights of the cations in the added soaps, and decreases with increasing atomic weights. G. S. Hattiangdi, S. P. Adarkar, J. P. Jassawalla, and M. Prasad, *J. Physical and Colloid Chem. 52*, 1481-94 (1948).

Alcohol or Ester Formation

Alcohols or esters are formed by reaction of hydrogen with lead salts of mixed fatty acids consisting principally of lauric and myristic acids at a temperature of 240-400° C. and a pressure of 2,000 pounds per square inch. The reaction products consist of alcohols corresponding to the original fatty acids. Esters of these alcohols are formed. A number of variations of the method can be applied, and the process may be continuous. A. S. Richardson and J. E. Taylor, to The Procter & Gamble Co. of Canada, Ltd. Canadian Patents 455,372-455, 777.

Changes in Fat on Storage

Storage of fat for 2.5 years did not appreciably affect the smoke point, nor did storage for 3.5 years cause appreciable changes in the iodine value or the refractive index. A perceptible change in free fatty acid content occurred after storage for 3.5 years, but none after 2.5 years. The peroxide value was higher after 2.5 years' storage than at six months, but unaccountably was lower after 3.5 years than after 2.5 years' storage of the fat. A. Overman, B. Lowe, and W. J. Shannon, *J. Am. Oil Chemists' Soc. 25*, 434-7 (1948).

New Synthetics

A new series of synthetic surface-active agents are based on the sodium salts of the sulfuric ester of substituted phenols of higher molecular weight. They are called "Sellogens." S. N. Rao, *Indian Textile J. 59*, 346 (1949); through *Chem. Abs.*

ORONITE CHEMICAL COMPANY

THE NAME TO WATCH IN CHEMICALS

REG. U. S. PAT. OFF.

FOR FASTER WASHING, GREATER ECONOMY, CHOOSE D-40 DETERGENT

A typical example of improved cleaning methods is the use of D-40 to cut road grime and grease from railroad cars. The stability of D-40 in acid or alkaline based cleaners provides an economic advantage. Corrosivity and harmful paint removal can be reduced. Quick penetration, soil suspension and easier rinsing, all help to do the wash faster at lower cost.

The high surface activity of D-40 in low concentrations means a saving in materials, labor, wear and tear of equipment.

Faster penetration, quicker "break," easier rinsing, all help to speed up the wash.

Greater foam heights, stability, detergency, shorter wetting times and quick solubility in hard or soft water are a few of the advantages of this outstanding detergent.

D-40 is easily blended with other materials. As a cleaner by itself, it is unsurpassed. If you want to improve your wash or make water wetter, contact the Oronite office nearest you.

ORONITE CHEMICAL COMPANY

38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA
30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

RUMOR frequently affects us in our life and in our business. While most rumors cannot be traced to their source, it is remarkable how extensive is their influence. Once started, a rumor is self-propelling and spreads like oil spilled on quiet water. Our interest in rumors is limited to the harm or welfare such unauthenticated tales can do to a business, particularly in the plant. A closer scrutiny of rumors and methods used to combat false and damaging ones may be helpful.

The term "grapevine" is quite common among factory employees. Certain men and women aggrandize themselves by relating that very confidential information has come to them over the "grapevine," which implies from someone in a higher position. These exhibitionists then impart the information in a very secretive manner and, in turn, request secrecy for fear it may do harm to the unknown person from whom it came. Rumor mongers know that the information will be widely broadcast at the first opportunity. Their method is to prey upon the fear, hate, greed, success, happiness and gullibility of other employees. The motive is to advance their own interest or revenge by destroying company morale, the reputation of the management or of fellow workmen.

Rumors follow certain well-defined patterns. They depend mainly upon hate, fear, and desire. Some individuals are so clever in using rumors for propagandizing for certain objectives that they achieve their goal with little effort.

Some of the more common fears which beset factory personnel are layoffs, discharge, criticism of workmanship, demotion, lack of old age security, and illness. It is not uncommon for the "grapevine" to start the talk that a general plant shut-down is contemplated. This results in slow-down of work and an anxious attitude upon the part of the employees. If one employee does not like another, the story is started that the foreman is displeased with the victim's work and soon expects to get rid of him or her. This

DR. THOMSSEN

causes fretting and inattention upon the marked person's part. Often rumor-victims quit of their own volition. When illness occurs, spiteful fellow employees at times attribute the misfortune to some figment of their imaginations, thus adding worry to the stricken person. Hatred of the company, the work or the boss is also a source of these hate-type rumors. Much damage has been done to the reputation of a company's products by unfounded "yarns" started by disgruntled employees. At times such statements have been deliberately given wider circulation by unprincipled competitors. Common rumors of this type are that diseased persons are employed in a plant and handle products that touch the mouth or are used as foods; that the goods are adulterated or shoddy; that foul, filthy and unsanitary conditions prevail in a plant; that imperfect products are being unloaded at a small reduction in price; that cheap imported parts are being used in making up the output so that the company can overcome the higher wages paid; that products have been sold without proper testing and are coming back in such quantities that the company is on the verge of failure.

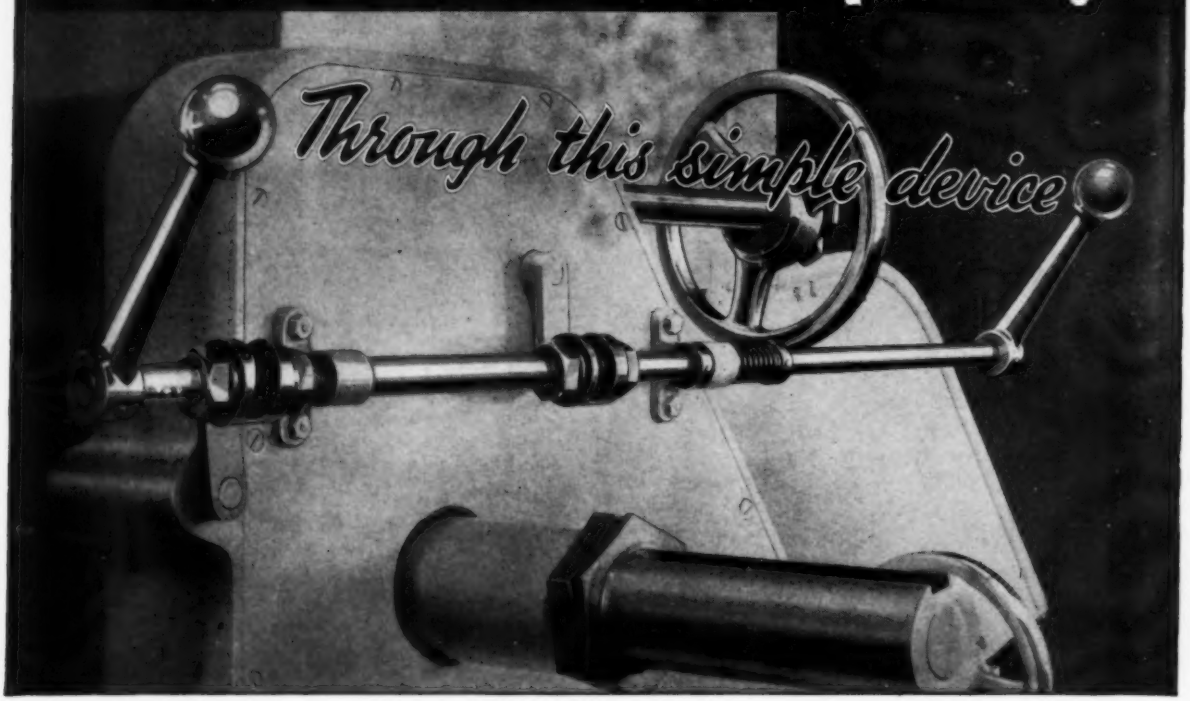
When hatred of management or the job exists, it is common practice to start rumors of a personal nature. The boss was seen out with one of the female employees, it is asserted, or a member of his family has been disgraced or was badly intoxicated. That jobs are going to be made more difficult through speed-ups or are being shopped out, are favorite rumors. It is remarkable how often credulous fellow employees will believe weird statements regarding their work and their employers.

Rumors based upon desire of attaining a certain goal may be referred to as the "pipe-dream" type. The persons starting them generally state as facts things which they want to believe are true. If they desire advancement they may refer to a competitive company and assert that at a recent interview they were assured of a job with great increase in wages. Or again, they will tell of some friend who works in a distant plant where employees are given many liberal privileges not available in the plant in which they work. Again, they may state that favoritism has been shown toward some employee who gained promotion by "pull," and a general protest is to be made.

The instances of rumors of these types are so frequent that anyone in charge of a plant could multiply them several times. Unfortunately, it is the harmful rumors that gain widest credence. Those of a constructive nature do not persist as long. It is a weakness of factory employees to believe bad statements instead of good ones. As a result, the rumor-monger derives much satisfaction from making fellow employees believe he is in the position to obtain information which is not available to the ordinary person. He is most zealous in spreading hate venom among fellow workmen in times of stress and unrest.

The antidotes for combatting the damage done by rumor-mongers are few and difficult. Efforts to trace a rumor to its source are usually futile. Denial by the guilty party is a cover-

3 cwts MORE SOAP per day



One of many excellent features to be found on the Vickers-Armstrongs toilet soap mill, the inter-connected scraper mechanism saves both time and fatigue. It is fitted on all double hopper mills. Just a flick of the lever from front or rear of the machine and both scrapers are actuated simultaneously. Operation is simplified, wear and tear on the operators' hands is greatly reduced and considerable time is saved between millings. It is reliably estimated that this device increases production by 5%—equivalent to 3 cwts. per day on the large size mill.

Vickers-Armstrongs Limited VICKERS HOUSE • BROADWAY • LONDON ENGLAND

O.B.T. 62

up that is difficult to offset. If he is discovered and penalized, others will consider this as a verification of the rumor. To try to limit freedom of expression through recourse to the law may be a grave error, for such a course might choke off a free and constructive flow of information. One cure for man's willingness to believe false tales lies within the field of education, especially the social sciences. Businessmen are realizing more and more the importance of evaluating the temper of their employees through the field of psychology. Labor relations directors must possess an intimate knowledge of the behavior of the minds of factory men and women. As a result, it is as necessary to teach factory employees to think for themselves and evaluate cheap shop talk as to train them in manual skills. Too little attention is given to this side of a factory employee's training. While such a procedure is long, costly and hopeless in the opinion of many, it has paid dividends when given a proper trial. The social sciences are closely related to the psychological aspects. Workmen must be taught that it is their privilege not only to assert themselves in words but to do so socially, as well. They must be taught that they are a part of the community in directions other than their jobs.

The fear of loss of job, of social standing or of face in the community must be eliminated through a more cordial understanding between labor and management. It must be emphasized that all are important to business and community life. The reasons for believing false statements must be eliminated. Unless this is done, workmen, particularly, are prone to believe that their positions are insecure and menial. Misunderstandings arise. When fanned by the hate peddlers, these personal conflicts, especially in times of uncertainty due to factory transitions or lay-offs, cause great harm. Only through a united and harmonious cooperation of boss and workmen can progress be made to combat this disease.

* * *

A continuous fat splitting plant, developed by Colgate-Palmolive-Peet Co., Jersey City, N. J., is featured by Foster Wheeler Corp., New York, N. Y. The company may be addressed for full information. A fat cleavage up to 99 per cent is claimed for the process. Other advantages are ease of control, greater economy of steam, and less operating labor. The equipment is built from special corrosion-resistant alloys.

Dustless Blender

STURTEVANT MILL CO. of Boston, is offering a blender which completely mixes powdered materials with no loss. Regardless of the densities, weights or fineness of the ingredients, a perfect blend is assured for the end product. Certain advantages are claimed for the mixer. It has a single opening for both charging and discharging. A simple thrust of a lever closes the machine when it is charged and changes it to the discharging position. Quick and thorough cleaning are possible by a convenient door. Rugged construction assuring long life is built into the blender. Capacities of 500 to 20,000 pounds are available.

Process Control

AS MANUFACTURING costs have mounted all along the line, efficient control of any process carried out in sufficient volume by the use of mechanical instruments instead of human effort is important. Bristol Co. of Waterbury, Conn., has specialized in control and recording instruments for many years. Among their many products they offer a "Mechanical Brain" which may be adapted to many processes. This instrument accurately coordinates all the variables of a process so that each phase takes place in proper order. The set of conditions which produces the best results is maintained automatically. This results in lower costs, higher efficiency, uniform quality and increased production. Installation costs are said to be paid for quickly by the economics of operation.

Glass Vials

GLASS vials that are lustrous and very attractive are being mass produced from machine-drawn tubing by modern methods by the Kimble Glass Division, of Owens-Illinois Glass Co., Toledo, O. They come in eight different sizes, with polyethylene stoppers which may be secured with a variety of colored inserts or in white. The vials can be printed by graphic methods with applied color lettering. Vials of this type offer an opportunity of presenting a beautiful sample rather inexpensively.

New Synthetic Soap Problems

THE increased use of synthetic detergents has presented a new problem to sewage treatment chemists. During the early part of the week, when most family washes are done, the settling tanks used in sewage treatment do not settle their contents properly. At first, this was puzzling, but now the condition is blamed on the increased concentration of wetting agents. The same difficulty is being encountered at drinking water intake sections during low water periods with the settling of flocs in alum treatment tanks. Methods to combat these problems are being studied by water and sewage treatment chemists.

—— ♦ ——

Conveyor Booklet

Convair Corp., Pittsburgh, recently issued an eight-page folder (Bulletin 102) "Pneumatic Conveying Systems." Typical conveying systems are illustrated and described in the booklet. The system is designed to handle pneumatically solid materials during unloading, storage, weighing and batching, special preparations and treatments, mixing, drying, packaging and delivery operations.

—— ♦ ——

Penn Refining Folder

Pennsylvania Refining Co., Butler, Pa., recently issued a new descriptive folder for its line of "Pen Drake Petrosuls" (petroleum sulfonates). The six-page, two-color lithographed pamphlet traces the development of the "Petrosuls" during the war, lists specifications and applications. The compounds are oil-soluble petroleum sulfonates or "mahogany soaps" that come in seven grades of various compositions, properties and surface tensions. They are available in low and high molecular weights, possess high oil solubility, surface active properties and stability characteristics. Copies are available by writing.

we're not the first rose of summer...

but you could never tell the difference by the smell!

We are known far and wide for the great *variety* of fragrant materials we supply to the soap industry. But we are especially proud of our specialties, which are recognized by perfumers throughout the world for their distinguished quality.

You will find in our Rose No. 50, Geranium Synthetic No. 1086, Jasmin d'Espagne, Sophora No. 1128, Castoreum Synthetic, and many others, a happy alliance of the artistry of the perfumer and the scientific skill of the chemist. Their use can help you put more selling scents in your soaps.

Greater Distinction through

Givaudan-Delawanna, Inc.

330 West 42nd Street, New York 18, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Detroit • Chicago • Seattle • Los Angeles • Montreal • Toronto

New Light Wt. Polisher

The addition of a new, lightweight (33 pounds) floor polisher to its line of floor conditioning machines

was announced recently by Red Devil Tools, Irvington, N. J. The new machine, "FP11", is designed especially for conditioning small floor areas. Its features include a handle that can be lifted off and set on the vertical post for storing; bicycle type handle bars and pistol grip switch; a cable hook that holds cord taut and eliminates need of releasing more cord than is necessary; brush that can be removed quickly without tools or gadget; roller casters that drop down for moving the machine on and off job; a white rubber all-around bumper that prevents soiling of base boards; completely enclosed motor centered directly over the brush; long-life lubrication; and special fins and louvers to keep motor cool. The new "FP11" is finished in baked-enamel and chrome in green, sea gray or cream white colors. It operates on either A.C. or D.C. current. It accommodates a 10-inch brush, with an 11-inch bristle spread, revolving at 300 rpm.

Bulletin on Refractometer

Features of the new Bausch & Lomb "Abbe 56" refractometer are described in Laboratory Equipment Bulletin No. 108, recently released by Will Corp., Rochester, N. Y. The bulletin also announces a new "Universal Cell Holder" for accommodation of various sizes absorption cells as an accessory for the "Kromatol" photoelectric filter photometer, and a new, small, self-contained autoclave sterilizer.

Mill, Mixer Catalogs

Charles Ross & Son Co., Brooklyn, recently issued two catalogs on its line of mixers and three roller mills. A complete line of standard mixers for materials ranging in consistency from heavy pastes to liquids is illustrated and described in catalog 21-E. Ross three roller mills are shown and discussed in catalog 8-E.

Reprint Soap Articles

Foster D. Snell, Inc., New York, recently issued in booklet form reprints of a series of statistical articles published in *Soap & Sanitary Chemicals*. The articles, dealing with soap making raw materials cover such things as: tallow, tallow acids, olive, coconut, palm, fish and whale oils, rosin, caustic soda, soda ash, trisodium phosphate and sodium pyrophosphate. The introductory section of the booklet deals with specialized services offered by Foster D. Snell, Inc.

Issue Chemical Formulary

Chemical Publishing Co., 26 Court St., Brooklyn, recently announced publication of the 1948 edition (Volume VII) of *Chemical Formulary*. Formulas on a wide variety of industrial products including soaps and cleaners, insecticides, fungicides and weed killers are included. Price is $7.00.

Lehmann Coast Service

A new sales and reconditioning service for west coast users of machines built by J. M. Lehmann Co., Lyndhurst, N. J., was inaugurated recently it was announced by E. E. Mueser, president. Moore Dry Dock Co., Industrial Engineering and Machinery Division, Oakland, Calif., has been appointed as agent for Lehmann sales and factory-supervised reconditioning service.

Moore Dry Dock Co., which maintains a machine shop equipped for industrial assignments, will be supplied with Lehmann replacement parts as required.

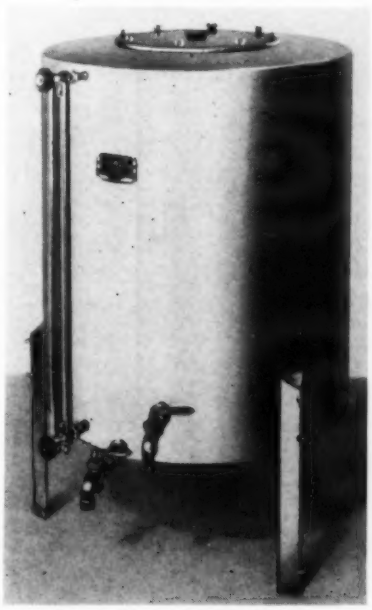
Issue Chlordane Data

Chlordane shows promise against carpet beetles, clothes moths and some other household insects, but further testing is needed before recommendations are made, the U. S. Department of Agriculture announced recently. Characteristics of two per cent chlordane sprays are described in the announcement, and it is stated that "the killing power of the film lasts for weeks or even months." Details are given for application either by spraying or by use of a paint brush.

New Alsop Tank Line

Alsop Engineering Corp., Milldale, Conn., recently announced a complete new line of air-tight storage and settling tanks to supplement its line of stainless steel mixing tanks. The new tanks are all-welded and constructed of 16 gauge stainless steel. The stainless steel cover, with heavy rubber gasket for air-tight protection, features a two-inch center opening. One or more faucets can be supplied. Tanks are available with sloping bottom for complete, fast drainage or with flat bottom for mounting on racks or table. All tanks can be supplied with stationary or portable stands. A complete range of sizes from five to 250 gallons capacity are carried in stock.

New Alsop stainless steel storage tank with stationary stand.



got a job for DRIER ROLLS?

Here's how to do it faster

Lukenweld Jacketed Steel Rolls have helped dozens of companies speed up operations—heating or chilling materials to dry, crystallize, harden or otherwise condition them. Records covering hundreds of these rolls show production increases as high as 41% without increasing steam pressures. When pressures are elevated, production increases to over 60% can be achieved.

The jacketed, steel plate construction of Lukenweld Rolls does the trick. Steam, circulating through their narrow passages, moves at high speed; condensation is removed positively and continuously. Heat (or cold, if it's a chilling job) is transferred rapidly and uniformly through the comparatively thin but strong steel walls. Lukenweld Jacketed Steel Drier Rolls can be safely operated at pressures of 350 psi and higher.

Whether your job calls for rolls alone, an addition to present equipment or a complete new machine, Lukenweld engineers are prepared to engineer and build it for you. For such help, or for Bulletin 358 on Lukenweld Rolls, write Lukenweld, Division of Lukens Steel Company, 446 Lukens Building, Coatesville, Pennsylvania.

We'll lend you "LUKENWELD", a 16mm motion picture with sound, highlighting our methods, facilities and products. Running time: 20 minutes. Write for booking date.

LUKENS
LUKENWELD DIVISION

DESIGNERS, ENGINEERS AND MANUFACTURERS OF MACHINERY

PRODUCTS AND PROCESSES

Liquid Detergent

A new low-cost detergent made by Monsanto Chemical Co., St. Louis, called "Santomerse 30-X," is particularly useful in strong acid or alkali. It is a liquid with a solids content of 30 per cent, which consists of 85 per cent alkyl aryl sulfonate and 15 per cent sodium sulfate. The product is suitable for making liquid cleaners, besides having application in the textile industry.

The stability of the detergent in solution, to various heavy-metal salts is as follows, in terms of milligrams of salt causing precipitation in one per cent solution of the detergent:

Salt	*mg. salt*
Calcium chloride	100
Magnesium sulfate	100
Copper sulfate	100
Aluminum sulfate	13
Barium chloride	19
Ferric sulfate	14
Lead nitrate	34
Zinc sulfate	100
Nickel nitrate	100

Protective Cream

A cream which protects the hands against oil and grease but can be readily removed by washing contains the following:

Soap flakes	7.5 grams
Glycerine	25.0 ml.
Sodium silicate	25.0 ml.
Tragacanth	0.2 gram
Oil of lemon	0.05 ml.
Water, to make	100.00 grams

Drug and Cosmetic Ind. 63, 655 (1948).

Synthetic Toilet Cake

A cleansing and laundering composition is covered which comprises a mixture of a detergent selected from the group consisting of water-soluble salts of aliphatic sulfates or of organic sulfonic acids, plus an amide of the formula RCONR′R″ in which R contains nine to 13 carbon atoms; R′ and R″ are selected from the group consisting of hydrogen and alkyl radicals having one to four carbon atoms. Instead of an amide the second compound may be a N-acyl morpholine having 12-14 carbon atoms in the acyl radical. In either case the second compound should be present in an amount less than that of the synthetic detergent but sufficient to enhance its detergent power. A. S. Richardson and W. H. McAllister, Canadian Patent No. 455,051, and N. B. Tucker, Canadian Patent No. 455,052, both assigned to The Procter & Gamble Co. of Canada, Ltd.

Soybean Oil Extraction

A solvent consisting of denatured alcohol mixed with trichloroethylene to give a specific gravity of 0.91, can be used successfully in a continuous extraction plant to remove oil from soybeans. The extraction is carried out at 70°C. and the miscella cooled to cause it to separate into two phases. The lower phase can be separated and stripped to remove the solvent while the upper phase can be returned to the system without evaporation to extract more oil. The moisture content will not build up in the solvent if beans having less than six per cent of moisture are used, and the drying is done with 10 pounds per square inch steam pressure on the drier. S. G. Measmer, O. R. Sweeney, and L. K. Arnold, Proc. Iowa Acad. Sci. *54,* 189-97.

Synthetic Fatty Acids

The liquid-phase oxidation of the high-boiling fraction of Fischer-Tropsch primary products has been studied. Optimum results were obtained by oxidizing a mixture of approximately equal proportions of the saturated fraction boiling at 300-375°C. and unsaponifiable material from a previous oxidation to a final saponification number of 150, by passing 16.5 liters of air per 100 grams of raw material at a temperature of 110° C. in the presence of an oil-soluble manganese catalyst. The acids in the range C_{10} to C_{20}, obtained in 50-70 per cent yields, give good soaps. These are not suitable for toilet purposes owing to secondary odor development which does not occur when the soaps are used for washing fabrics. D. Gall and C. C. Hall, *Fuel 27,* No. 5, 155-67 (1948).

Tall Oil Composition

Methods of analysis of tall oil are given. Results of analyses of one sample each of 1946 and 1947 tall oil from nine different plants fell in a range as follows: 0-3.87 per cent of volatile matter, 0-0.26 ash, 1.94-5.41 Engler viscosity (100°), a_4^{20} 0.9453-1.0115, acid value 145-67, resin-acid value 53.2-87.2, 30.9-50.6 per cent resin acids, and 1.0-6.9 per cent matter insoluble in petroleum ether. The petroleum ether-soluble fraction contained 37.0-57.7 per cent of fatty acids with an acid number of 165-87. S. K. Kahila, *Finnish Paper Timber J. 30,* 144-6, 164, 171-4, 198-202 (1948); *through Chem. Abs.*

Bleaching Oils by Sorption

On the basis of adsorbent activity the acid-activated clays are generally 1.5 to two times more effective as bleaching agents than the natural earths. The activity of an adsorbent in bleaching a vegetable oil is at a maximum at some particular temperature. This maximum activity for acid-activated clays was at 100-106°C.; for natural earths 118-132°C.; and for clays high in silica content 180-250°C. L. E. Stout, D. F. Chamberlain, and J. M. McKelvey, *J. Am. Oil Chemists' Soc. 26,* 120-26 (1949).

Polymeric Detergents

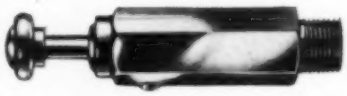
Water-soluble, polymeric detergents are formed by condensing one molecule of an alkyl substituted phenol with 0.5-1.0 molecule of formaldehyde. The resultant oily or resinous product is then treated with eight to 80 molecules of an alkylene oxide. Sulfate, sulfonate, and phosphate esters can also be used for producing these products. Other intermediate compounds are useful in producing the final polymeric surface-active agent. L. H. Bock and J. L. Rainey, to Rohm & Haas Co. U. S. Patents No. 2,454,-541 to 2,454,545.

Superior Soap Dispensers
by Soaperior

Model 159 for Liquid Soap
Model 149 for Lather

Here is dignified beauty combined with long trouble-free service. Specified as standard equipment by the Country's largest Boards of Education.

Steel tank, porcelain enameled inside and out, thoroughly corrosion proof. Sight glass shows soap level, filler cap locks on and wall plate is concealed. Occasional damp-wiping keeps this dispenser like new. Also with chrome plated tank. Available with or without sight glass. Adjustable stem packing prevents leakage. Capacity—1-quart.



Model 103 Liquid Soap Valve

For tank and valve systems. The only Valve on the market with an integral rear check, permitting removal of working parts for replacement or repair without shutting off soap at tank. Other Valves on the same supply line remain in service. Adjustable stem packing prevents leakage. We also furnish steel, porcelain enameled and stainless steel tanks, as well as complete systems with pipe and fittings, pipe cut to measure and threaded.

Hospital Liquid Soap Dispenser
MODEL 159-L

Same as Model 159, but equipped with an extended lever for operation by the elbow or forearm. Soap flows steadily till the lever is released, thus giving the surgeon an adequate supply of soap without pumping. An excellent specialty item. Nine washup sinks can be equipped with Model 159-L for the cost of only one pedestal type dispenser. For surgical soap or alcohol.

for further details, write

U. S. Sanitary Specialties Corporation
Equipment Division
435 SO. WESTERN AVENUE CHICAGO 12, ILL.
Offices in New York and principal cities

Let Modern Triangle Machinery Reduce Your Packaging Costs 25% or More!

• IN many plants one of the greatest opportunities for reducing costs and protecting profits lies in the packaging department. New developments in Triangle Package machinery make it possible for plants packaging dry materials to save labor, minimize waste and breakage and turn out better looking packages faster in less space . . . with savings of 25% and more.

• FOR EXAMPLE: The Triangle Model U-1 powder packer has been redesigned to help you cut costs. One operator can handle 18 to 30 packages per minute, 1 oz. to 5 lbs. As soon as the operator places the container in position, filling starts automatically. No spillage, no waste. Powder is packed uniformly and tightly, permitting use of smaller, less expensive containers. Handles hundreds of products . . . quickly changed over . . . easy to clean . . . minimum floor space and low in first cost! This is one of many Triangle automatic and semi-automatic machines to reduce the cost of packaging dry materials.

• For complete data, send a sample filled package to Triangle and state production required . . . no obligation.

Ask about the Triangle Pay-As-You-Package Plan

TRIANGLE PACKAGE MACHINERY CO.
6640 W. DIVERSEY BLVD., CHICAGO 35, ILL.

Sales Offices: San Francisco, Denver, Dallas, Atlanta, New York, Pittsburgh, Boston, Jacksonville. *Branch Factory:* Los Angeles.

SOAP PLANT OBSERVER

By John W. McCutcheon

A QUESTION that frequently arises in regard to synthetic detergents is their application in the commercial laundry field. What their future is, what volume of business can be expected and what types of synthetics will be used in commercial laundering are questions still to be answered. The following facts and impressions were revealed in a brief investigation.

Soap is and will remain the chief cleansing agent in the laundry for the following reasons: (1) Most laundries soften their own water and, hence, lime soap precipitation, "tattletale grey," etc., are not factors; (2) Ready availability; and (3) Low price. At the present time the price ratio in the New York area is approximately 10 to 11c per lb. for 88 per cent tallow chips, as against 16-17c per lb. for built synthetics of the alkyl aryl or non ionic types. If the price of soap were to rise beyond that of synthetics, the use of the latter would immediately increase. Such an advance in soap prices would indicate 15c tallow, which appears quite unlikely under present market conditions.

The main argument for synthetics is that they can be used at lower wash temperatures which means economy of steam, and more neutral systems that are easier on wools, silks, etc. and on the more fugitive dyes.

In one large laundry visited, such clothing materials are given a separate classification and are washed at low temperatures in "Renex-28," which is a non-ionic ethylene oxide condensate of fatty and rosin acids built with sodium carboxy methyl cellulose to assist suspending power. The results are very satisfactory. The observation was made by the laundry's supervisor that socks washed with "Renex-28" did not give off any objectionable odor on the steam press as was noted when soap was used. One possible explanation is that the acidic products of perspiration may be partially neutralized to insoluble salts by

the soap, thus making it more difficult to rinse them out. Built alkyl aryl sodium sulfonates such as "Skortex," and alkyl sulfates such as "Orvus" are also being used in laundries for washing at lower temperatures. Doubtless many other synthetic type products are also being employed. In the particular laundry visited, heavy wool blankets were being washed with an anionic alkyl sulfate in preference to non-ionics because of improved softness, or "hand," as it is called in the textile trade. In scouring woolens in a textile mill, non-ionics are preferred over anionics because they do not exhaust on the fabric. In the laundry, where the wash liquors go to the sewer, this is not a factor. The addition of small amounts of tetra-sodium pyrophosphate assist the anionic to clean the trim of the blankets.

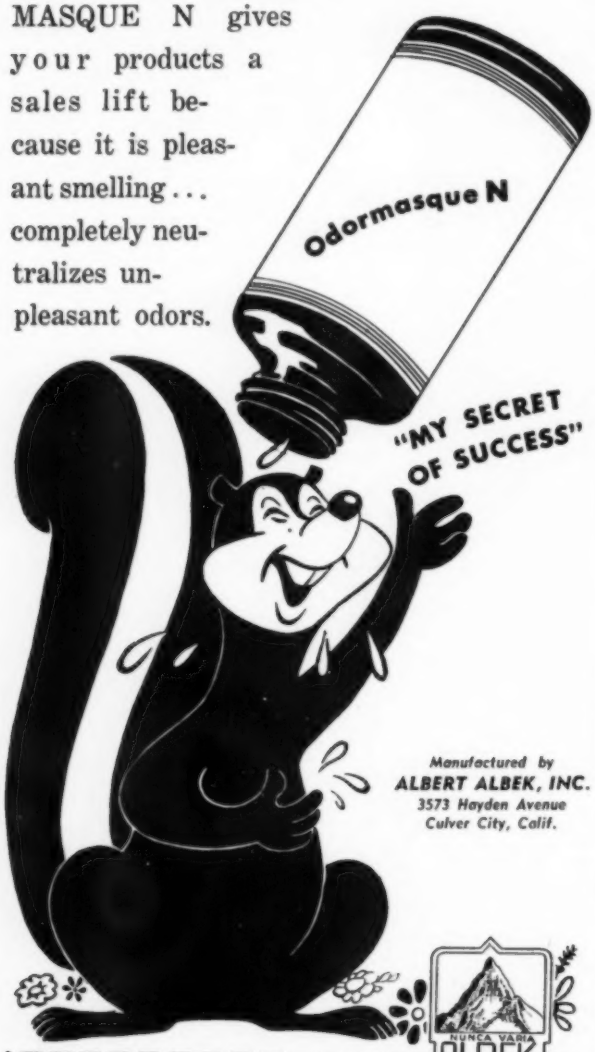
From the above, it may be seen that synthetics have a useful place in commercial laundries, particularly those detergents that can meet soap prices most closely. However, since probably not over 5 per cent of the synthetics can meet the competition on soap prices, it does not seem likely that the overall market for synthetics in the laundry field can exceed five to eight million pounds a year.

CHANGES in terminology in any trade or industry are always an indication of growth. With the soap industry widening its field of raw materials, it is natural that such changes are taking place. "Lorol" has been used for some time to designate products containing fatty acids from coconut oil, as distinct from the term "Lauryl" which represents $C_{12}H_{25}$—or the fraction of distilled coconut fatty acids richest in lauric acid. Another term used for the same purpose is "Coconate." Employed in the same manner as oleate, stearate, etc., "Coconate" refers to derivatives having coconut fatty acids. Soapers who make synthetic detergents have coined the word "Sope" to conveniently differentiate between such products and soap. This appears to be a highly practical suggestion which should commend itself to the trade in general, and henceforth will be used in this column when the occasion arises.

PRESENT tallow prices have caused a great deal of concern to both small and large renderer, and numerous inquiries have been received as to what can be done about it. There is no doubt that the present price of 5-6c per lb. is below the general commodity market. Fifteen years ago when an automobile could be purchased for $900.00, tallow was considered low at 4½ to 5c per lb. At the same time, coconut oil was about 6 to 7c per lb., tax included. One large soaper with whom the writer discussed this subject recently was very decided in his opinion that the present differential between these raw materials was in large part due to the advent of synthetic detergents in the retail field. This may be coincidental. However, factors tending to maintain coconut oil prices would be their continued demand for use in both soaps and synthetics, plus the reduced supply available to the American consumer as a result of foreign demand. The same factors work in reverse in the case of tallow. In addition, the use of "bread softeners," such as the polyoxyethylene stearates, may seriously reduce the

WATERLESS HAND CLEANER MANUFACTURERS:

Why cripple sales appeal with undesirable odors of ammonia and mineral terps? ODORMASQUE N gives your products a sales lift because it is pleasant smelling... completely neutralizes unpleasant odors.



Manufactured by
ALBERT ALBEK, INC.
3573 Hayden Avenue
Culver City, Calif.

NUNCA VARIA
ALBEK

Albert Albek, Inc.
3573 Hayden Ave.
Culver City, California

Please send a free sample and more information about Odormasque N.

NAME .....

COMPANY .....

ADDRESS .....

CITY .....

ZONE .....STATE .....

WANT TO BUILD SOAP SALES?

USE THIS FEDERAL

Transparent Plastic

POWDERED SOAP DISPENSER

as a low-cost

CUSTOMER PREMIUM!

Now! Get... and *keep*... steady, repeat soap business by using this handy little, dandy little transparent plastic powdered soap dispenser as a good will premium! It has genuine customer appeal... is priced to fit into a give-away or self-liquidating sales plan. Sturdy, long-life construction; smart, modern styling; positive metal agitator that prevents packing... meets most soap flow characteristics. Push-up plunger permits quick, easy, one-hand operation; close-fitting top swings open for convenient filling. Steel sleeve surrounding dispensing mechanism gives added strength, provides secure support for spot-welded steel bracket for wall mounting. Exterior metal parts have baked-enamel finish to harmonize with plastic color. Capacity: approximately 1 pint; size: 8" high x 4" diameter. Fully guaranteed. *Write for special prices today!*

(WE DO NOT SELL SOAP POWDER)

FEDERAL TOOL CORP.
3600 W. PRATT BLVD., CHICAGO 45, U.S.A.

amount of shortening required to effect normal tenderness in bread. The U. S. Department of Agriculture (*Fat and Oil Situation No.* 130) considers such addition as reducing this outlet for lard and shortening, which indirectly also may be a factor in keeping down tallow prices. One suggestion which comes to mind is the report that the Germans were able to increase the solubility of tallow soaps and detergents by the introduction of chlorine into the chain, or by adding an alpha methyl group. Such procedure might widen the field for tallow consumption and at the same time allow the soaper to reduce his present coconut oil to tallow ratio. Perhaps this is what the sponsors of the coconut oil tax were intending all along! Now to dust off some of those old research reports.

POTASSIUM salts in the soap industry were mentioned last month. Due to the interest aroused, the following additional references are given. Tetra potassium pyrophosphate has a solubility of 190 grams in 100 ml. of water at 25°C. It can be used in liquid soaps to increase detergency and dirt suspending power. Potassium silicates do the same. See R. C. Merrill and R. Getty, "Pot. Silicates in Soaps," *J. Am. Oil Chem. Soc.* Vol. XXVI, 5-10(1949) and R. C. Merrill, "Pot. Laurate-Sod. Silicate System," *J. Phys. and Colloid Chem.* Vol. 52, 1143-6(1948). In boiler-water treatment, regular silicates function well below 600 psi. Above this pressure, it is desirable to replace the sodium silicate with potassium, as the latter has greater solubility and less tendency to deposit scale under these conditions. (See Philadelphia Quartz Co.)

SALT from glycerine lye may be removed by the Bird continuous centrifuge as was mentioned in the April column. Another type of centrifuge suitable for this purpose is the Sharples "Super D-Hydrator." Like the Bird centrifuge it has a horizontal basket, but differs in that it works on a time cycle, somewhat on the principle of a Bendix washer. During the first cycle, the machine feeds and loads the basket. The cake is then washed, spun dry and discharged through a front opening chute. A light spray of water prepares the bowl, and the cycle repeats itself. On the basis of a 71 second cycle, a 20″ diameter bowl and operating at 1800 R.P.M., the capacity is 2500 lbs. of salt per hour, at a moisture content of 4 per cent, and glycerine of 0.2 per cent, and a wash water ratio of 0.3 lb. of water per lb. of salt. A machine of the size described above takes a 20 H.P. motor and is constructed of stainless steel or monel. Cycles may be varied in length by simple adjustment, or additional cycles may be added as desired. A larger machine having a 27″ bowl and a 40 H.P. motor, has a capacity of 4600 lbs. per hour. In any operation involving salt separation from crude glycerine or calcium sulfate removal from treated sweet waters, either the Bird or "Super D-Hydrator" centrifuge should be given careful consideration.

—— ♦ ——

New Sprout Waldron Filler

Sprout, Waldron & Co., Muncy, Pa., recently issued a bulletin on its new "Bantam 'VA' Mixer," the latest addition to its line of vertical mixers. The mixer's range of applications, construction details and methods of operation are discussed on the first page of the bulletin. A complete listing of specifications and a template (½ in. = one ft.) are found on the second page. Bulletin 39-B is available on request by writing the company at Muncy, Pa.

—— ♦ ——

New Taylor Instrument

A new, force-balance type, pneumatic temperature transmitter for applications requiring indication, record or control to be remotely located from point of measurement was announced recently under the trade name "Transaire" by Taylor Instruments Cos., Rochester, N. Y. The unit features a new device that is said to overcome the lag existing in previous heat measuring instruments.

—— ♦ ——

Schimmel Issues Price List

A booklet containing prices of essential oils, aromatic chemicals, resinoids and extrols, and oleoresins and concentrates, has been issued recently by Schimmel & Co., New York.

Issues Mixer Data

F. J. Stokes Machine Co., Philadelphia, currently is distributing information on its new line of mixers. Named "21-H" mixers, the machines range in size from 50 to 300 lbs. capacity, and are specially designed for the mixing of dry or moistened materials. An adjustable discharge chute, simplified dumping mechanism and adaptability for special mixing applications are features of the new machines. Specifications are available from the company.

—— ♦ ——

Warns on Solvent Labels

A warning against lack of or improper labeling of secondary containers of solvents was issued recently by the Safety Research Institute, Inc., New York. In its bulletin the Institute points out that solvents purchased from sources other than the manufacturer do not always carry precautionary information. In such instances, proper warning labels which may be obtained from the maker should be put on the container before the solvent is used.

—— ♦ ——

New Hooker Compound

A new compound, sodium trifluoroacetate, which may be used in the preparation of insecticides and herbicides is now being produced in pilot plant quantities, it was announced recently by Hooker Electrochemical Co., Niagara Falls, N. Y. A white, odorless, non-corrosive, free flowing powder, the salt is non-toxic and is 98 to 99 per cent pure. It is hygroscopic. A technical data sheet (No. 377), describing the material, is available.

—— ♦ ——

Book on Insecticides

The National Research Council, Washington, D. C., recently issued an 84-page book dealing with, "The Mode of Action of Organic Insecticides" by Robert L. Metcalf of the University of California Citrus Experiment Station, Riverside. The review was prepared under the auspices of the entomology subcommittee of the Chemical-Biological Coordination Center, the chairman of which is Dr. Roger B. Friend, Connecticut Agricultural Experiment Station.

Here's the easiest furniture polish in the world to make!

And an ACE of a Finish Producer Too!

Only three ingredients required—mineral oil, water and Nopco* 1248-X furniture polish base.

That's the tip off: Nopco 1248-X furniture polish base. No need for a complicated formula if you use Nopco 1248-X—*no need even for heat.* You simply add the oil to the base *at room temperature,* agitate thoroughly and add water.

If ever the saying "easy as falling off a log" was 100% pertinent, it is here!

And this is no case of gaining in one direction at the expense of another. For not only does Nopco 1248-X provide an extremely simple and economical method of obtaining a furniture polish, but the polish produced is of top notch quality, characterized by *high stability* and *freedom from stickiness and excessive oiliness.*

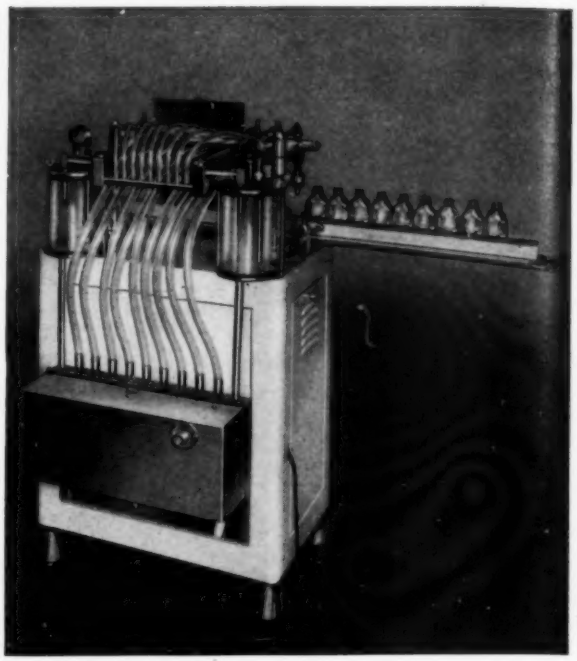
Minimum rubbing results in a uniform, glossy finish that both protects and beautifies. Write for details today.

NOPCO CHEMICAL COMPANY
Harrison, New Jersey
Gentlemen:
Please send me full information about Nopco 1248-X Furniture Polish Base.
Name.....
Firm.....
Address.....
City..... Zone..... State.....

*Reg. U. S. Pat. Off.

NOPCO — EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY
Harrison . . . . . New Jersey



The NEW Semi-Automatic Straight-Line Vacuum Filler

Judge a Thoroughbred By the Family Record

A new addition to any established line is instinctively judged by the company it keeps—and rightly so. The reputation of its line companions is the highest endorsement this new filler can have.

The new member of the U. S. Bottlers' line of filling machines is a semi-automatic Straight-Line Vacuum Filler. Its name—

"MODEL B-49." It is a versatile machine for filling liquids and semi-liquids. Designed for quick, on-the-job changeover for any container up to gallon size and with efficient speeds on all size containers without undue pressure upon the operator.

Mechanical innovations introduce more comprehensive automatic machine operation for eliminating hand servicing. The product handling system is designed for quick clean-up after runs and the operating mechanism is simple and substantial for many years of enduring, uninterrupted filling service.

Seldom does a new machine, so quickly, make a place for itself in established filling set-ups either on steady production or as a versatile standby unit for peak loads. The Model B-49 Bulletin will give you the interesting details; write for it today.

- **THE U. S. ROTARY FILLER**
- **THE U. S. MODEL B-2 SEMI-AUTOMATIC VACUUM FILLER**
- **THE U. S. SIPHON FILLER**

U. S. BOTTLERS' MACHINERY COMPANY
4019 North Rockwell St., Chicago 18, Illinois

NEW PATENTS

Conducted by

Lancaster, Allwine & Rommel

PATENTS, TRADEMARKS AND COPYRIGHTS

402 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired to Lancaster, Allwine & Rommel.

No. 2,468,753, Bleaching Oils and Fats, patented May 3, 1949 by Lloyd F. Henderson, Reading, and Louis H. Libby, Boston, Mass., assignors to Lever Brothers Company, Cambridge, Mass., a corporation of Maine. The patent covers a process of bleaching dark colored oil and fat stocks, which comprises treating said stock with an acidic phosphoric compound such as orthophosphoric acid, pyrophosphoric acid and acidic salts thereof, and oxygen in the presence of a silicate radical-containing inhibitor.

No. 2,468,799, Hydrogenating Fat, patented May 3, 1949 by Norbert W. Ziels, Leonia, and Werner H. Schmidt, Grantwood, N. J., assignors to Lever Brothers Company, Cambridge, Mass., a corporation of Maine. A method is described for producing a fat solid at room temperature but substantially liquid at body temperature, which comprises hydrogenating a normally liquid glyceride oil selected from the group consisting of peanut oil, cottonseed oil and soy bean oil, with a nickel catalyst containing 1.38 to 5 per cent sulfur based on nickel, at a temperature of 130 to 250°C., and at a pressure of 5 to 100 pounds per square inch hydrogen.

No. 2,469,228, Insect Repellent, patented May 3, 1949 by Samuel I. Gertler, Washington, D. C., dedicated to the free use of the People in the territory of the United States. An insect repellent is covered comprising benzyl ether as the essential active ingredient incorporated into zinc oxide.

No. 2, 469,303, Insect Repellent Comprising Benzyl Ethers of Ethylene Glycol, patented May 3, 1949 by Robert B. Killingsworth, Douglaston, N. Y., asignor to Socony-Vacuum Oil Company, Incorporated, a corporation of New York. An insect repellent comprising a mono (trimethyl benzyl) ether of ethylene glycol, and a liquid carrier therefor is patented.

No. 2,469,317, Insecticidal and Fungicidal Composition, patented May 3, 1949 by Edward C. Shokal, Oakland, and Lynwood N. Whitehill, Berkeley, Calif., assignors to Shell Development Company, San Francisco, Calif., a corporation of Delaware. The patent describes an insecticidal and fungicidal composition suitable for use in the household, comprising a normally liquid hydrocarbon having its boiling range substantially above the boiling range of gasoline, said hydrocarbon being a mineral hydrocarbon spray oil, and a dialkenyl diester of diglycollic acid wherein the alkenyl radicals each have from 3 to 4 carbon atoms, inclusive, and are selected from the group consisting of allyl and methallyl radicals.

Reilly Coal Tar Chemicals

FOR THE SOAP AND DISINFECTANT INDUSTRIES

NAPHTHALENE: Crude and refined prime white—in chipped, crystal, flake and powdered form.

CRESOLS: U.S.P., Meta, Para, Ortho, and special fractions—to all specifications.

XYLENOLS: Low boiling, high boiling, symmetrical.

TAR ACID OILS: In all grades, from 10% to 75% tar acid content, or of specified phenol coefficiency, carefully blended.

Write or wire for information on any of these products.

CRESYLIC ACIDS

The entire range—in standard grades or to specifications.

REILLY TAR AND CHEMICAL CORPORATION

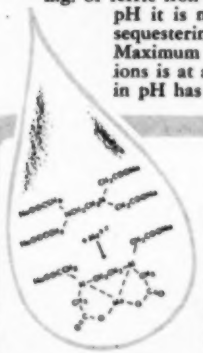
Merchants Bank Bldg., Indianapolis 4, Ind.
500 Fifth Avenue, New York 18, New York
2513 S. Damen Avenue, Chicago 8, Illinois

NEW, POWERFUL SEQUESTRANT VERSENE Fe-3*

(Inactivates Trivalent Iron)

VERSENE Fe-3* does more than soften water. It actually inactivates troublesome trivalent iron as well as calcium, magnesium and other metallic salts. Until VERSENE Fe-3 was developed there was no really satisfactory sequestering or chelating agent for ferric iron.

At pH7, 10 cc of VERSENE Fe-3 sequesters 167 mg. of ferric iron plus 158 mg. of calcium. At this pH it is nearly 10 times more effective in sequestering trivalent iron than at pH12. Maximum effectiveness on alkaline earth ions is at about pH9 and a further increase in pH has little additional effect.



VERSENE*
(REGULAR)

Regular VERSENE is an exceptionally versatile product for the Soap Industry. It is chemically known as Ethylene diamine tetra acetic acid tetra sodium salt. Versene does the following things with great effectiveness.

SOFTENS WATER . . . without the formation of precipitates. It forms soluble non-ionic compounds with alkaline earth and other ions such as ferrous ions which cause hardness in water. VERSENE is the only sequestering agent that can be manufactured into soap and remain in it as a water softener without decomposition.

CLARIFIES LIQUID SOAP . . . increases foam and rinsibility. Eliminates precipitates by removing interfering metal ions through formation of inactive and stable complexes of VERSENE.

ANTI-OXIDANT . . . for fats, oils, soaps, fatty acids, and other organic materials. Minute amounts of VERSENE act as a preservative and prevent rancidity.

DISSOLVES GREASE AND FOOD DEPOSITS . . . acts as a buffering agent. Saponifies fats. "Solubilizes" and partly hydrolyzes proteins. Provides two-way cleansing action.

PURIFIES ORGANIC MATERIALS . . . Organic materials contaminated with metals may be purified by the addition of small quantities of VERSENE. The offending metals are complexed and their ion activity reduced. The complex compound may in most cases be easily removed from the organic material thus insuring a higher grade product.

Regular VERSENE is available either as a pale, straw-colored aqueous solution or as a dry, white powder.

Write for samples, further applications and complete specifications.

*Trade Mark Registered

BERSWORTH CHEMICAL COMPANY
Framingham, Massachusetts

IT'S Koppers FOR

- **TAR ACID OILS**

  Any required tar acid percentage. Guaranteed coefficiency based on tar acid content. Crystal free at 0°C.

- **CRESYLIC ACID**

  99% minimum purity. Clean, uncontaminated odor. Boiling range and chemical compositions appropriate for all applications and required solubilities.

- **U. S. P. CRESOL**

  90% distills within range of 7°C. which betters Pharmacopoeia requirements.

KOPPERS COMPANY, INC.
Pittsburgh 19, Pa.

KOPPERS

No. 2,469,340, Insecticidal Use of Fluoroacetamide, patented May 3, 1949 by Nellie M. C. Payne, Stamford, Conn., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine. A method of combatting insects is covered, which comprises contacting them with a toxic amount of fluoroacetamide.

No. 2,469,371, Process of Reacting Glyceride Oils, patented May 10, 1949 by Ivor M. Colbeth, Maplewood, N. J., assignor to The Baker Castor Oil Company, Jersey City, N. J., a corporation of New Jersey.

A process is described in the patent for the preparation of partial esters of polyhydric alcohols and higher fatty acids, which comprises the steps of (1) reacting a substantially neutral fatty oil with methyl alcohol in the presence of an esterification catalyst at a temperature in the range from about 15° C. to about 50° C. until the ester interchange reaction is substantially completed and the fatty oil is substantially converted to methyl esters of the fatty acids of said fatty oil, the quantity of methyl alcohol being at least 6 moles for each mole of triglyceride present in said oil, (2) further reacting the thus formed mixture of glycerine and methyl esters of fatty acids with added polyhydric alcohol by heating the entire reaction mixture between about 65°C. and about 95°C. until the methyl esters of the fatty acids are converted to partial esters of the polyhydric alcohol component present and the free methyl alcohol is distilled off, and (3) recovering the partial ester of the polyhydric alcohols.

No. 2,469,433, Method of Sequentially Depositing Reactive Solutions to Form an Insecticide, patented May 10, 1949 by Alfred Dinsley, La Canada, Calif. The patent covers the method of applying an insecticide on vegetation which comprises sequentially depositing on said vegetation two aqueous solutions, one of sodium sulphite and the other of sodium sulphide, one of said solutions carrying an acid capable of decomposing the two solutions when admixed and one of said solutions carrying substantially 3 per cent by weight of gelatine solution, said decomposing acid causing the composition to form a deposit of sulphur on the vegetation that is treated and the gelatine solution causing the admixed sulphite and sulphide solutions to spread evenly.

No. 2,469,493, Synthetic Detergent Composition, patented May 10, 1949 by George E. Barker, Pleasant Hills, Del., assignor to Atlas Powder Company, Wilmington, Del., a corporation of Delaware. A detergent composition is patented comprising a mixture consisting of from 5 to 95 per cent by weight of a sulfonate of alkyl substituted aromatic hydrocarbon selected from the class consisting of benzene and naphthalene, and wherein the alkyl group has from 9 to 16 carbon atoms; and from 95 to 5 per cent of polyoxyethylene ester of organic acid material selected from the class consisting of rosin and tall oil, said ester containing an average of from 12 to 30 oxyethylene groups per carboxyl group.

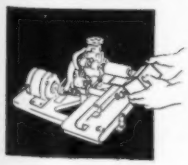
No. 2,469,753, Powdered Soap Product, patented May 10, 1949 by Joseph M. Tabor, East Islip, N. Y., Howard F. Seibert, Mason, Mich., and Paul R. Frohring, Bainbridge, Md., assignors to General Bio-chemicals, Inc., Chagrin Falls, Ohio, a corporation of Ohio.

Covered is the process of producing a dry powdered soap product directly from a saponifiable fatty material containing an unsaponifiable oil-soluble ingredient, said fatty material being selected from the class consisting of fats and fatty oils, which comprises: mixing said fatty material with an excess of aqueous saponifying agent in a closed saponification zone, agitating the saponification mixture, during the saponification maintaining in the saponification zone a pressure not greater than 355 mm. of mercury by exhausting therefrom

DON'T THROW YOUR MONEY DOWN THIS WELL

Potdevin Labelers are a **one time** investment that will save you time every day, money every pay day. Initial price is low—installation costs nothing—any worker can operate a Potdevin. With daily cleaning and weekly lubrication your Potdevin lasts a lifetime.

And while you're writing for a Labeler—on 10 days free trial—consider a Potdevin Carton Gluer to speed up shipping operations. It's power driven—puts glue on carton flaps as fast as your men can handle them. Saves adhesives by controlling the glue film—applying it only where it's needed.



POTDEVIN

POTDEVIN

MACHINE CO.

1256—38th Street Brooklyn 18, N.Y.

Please send me a Potdevin Labeler on 10 days free trial—and details on Potdevin Carton Gluers.

Name and Title .....

Company .....

Street .....

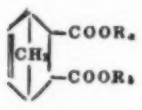
City ..... Zone ..... State .....

gases and vapors evolved during the saponification, whereby the heat of saponification is utilized to boil off water entrapped in soap lumps formed during saponification at a temperature substantially below the normal boiling point of water and the lumps thus disrupted and comminuted, continuing the agitation and maintenance of vacuum until the saponification mixture is substantially dewatered, extracting the dewatered mixture in the saponification zone with a solvent for the unsaponifiable ingredient which is a non-solvent for soap, decanting the solvent extract from the comminuted extracted soap, and removing residual solvent from the comminuted soap residue by vacuum distillation thereof with agitation in a current of dry steam, whereby a dry powdered soap product is produced.

No. 2,470,529, Pesticidal Composition of Polyethylene Polysulfide and Nicotine Sulfate, patented May 17, 1949 by William D. Stewart, Yonkers, N. Y., assignor to The B. F. Goodrich Company, New York, N. Y., a corporation of New York. A composition is patented capable of protecting plant life from destruction by fungi and insects comprising an aqueous dispersion containing a polymeric ethylene polysulfide having a polymer particle size of 1 to 3 microns and having a sulfur content of 80 to 85 per cent, and nicotine sulfate.

No. 2,470,906, Dentifrice, patented May 24, 1949 by Ralph Taylor, New York, N. Y. Patent covers a dentifrice comprising in combination a bodying agent and more than .5 per cent by weight of an active medium, adapted to transform mucinous coatings in the oral cavity into easily removable form, from the class consisting of ascorbic acid and acid analogues of ascorbic acid, the bodying agent being present in amount sufficient to render the dentifrice of paste consistency.

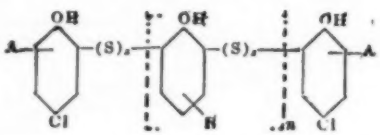
No. 2,471,790, Insect-Affecting Compositions, patented May 31, 1949 by Frank J. Sowa, Cranford, N. J., and Arthur Schwerdle, New York, N. Y.; said Schwerdle assignor to said Sowa. An insect-affecting composition is covered comprising a compound having the following general formula



in which Ra and Rb are alkyl groups, the total number of carbon atoms in both groups together being from 2 to 8, together with at least one insect-affecting composition of the contact paralysis type selected from the group consisting of dimethylphthalate;1,1,-dimethyl 1, 2-dihydro 5-butacarboxyl gamma pyrone; and p,p'-dichlorodiphenyl trichloro ethane.

No. 2,470,965, Manufacture of Grease, patented May 24, 1949 by Harold A. Woods, Wallace J. Yates, and Leendert Klingen, Martinez, and Robert C. Barton, Piedmont, Calif., assignors to Shell Development Company, San Francisco, Calif., a corporation of Delaware. The patent covers a process of preparing alkali and alkaline earth metal soap greases, wherein the hot grease is rapidly and uniformly cooled, the improvement which comprises forcing the hot liquid state grease from an enclosed heating and mixing zone directly into a zone of restricted cross-section having a thickness of not more than about 4 inches and cooled by suitable means, said grease being kept in said cooling zone and cooled statically therein substantially at a uniform and uninterrupted rate for a period sufficient for the grease to form a pronounced gel structure throughout and have a desired texture and uniform consistency.

No. 2,471,261, Mildew-Proofing, patented May 24, 1949 by Elmer W. Cook, New York, N. Y., and Philip H. Moss, Stamford, Conn., assignors to American Cyanamid Company, New York, N. Y., a corporation of Maine. A permeable organic material normally subject to attack by fungi is described, said material being mildew-proofed by a content of about 0.01 per cent to about 5 per cent of a heavy metal salt of a halogenated polyphenol sulfide containing from 3 to 10 phenol radicals, said halogenated polyphenol sulfide having the formula



in which A is hydrogen or halogen, B is halogen or alkyl, x is a whole number not greater than 2, and n is a whole number not greater than 8.

No. 2,471,265, Parasiticidal Compositions Comprising Alkyl-Halo-Naphthalenes, patented May 24, 1949 by Robert R. Dreisbach and Fred W. Fletcher, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware. The patent covers an insecticidal composition comprising an alkyl-halonaphthalene and pyrethrin as active toxicants.

No. 2,471,339, Long-Chain Amine Salts as Fungicides and Bactericides, patented May 24, 1949 by Arthur Minich, Westfield, N. J. and Milton Nowak, Brooklyn, N. Y., assignors, by direct and mesne assignments, to Nuodex Products Co., Inc., Elizabeth, N. J., a corporation of New Jersey. A microbicidal agent is described comprising: the reaction product of dodecylamine approximately 65 per cent, lactic acid approximately 16 per cent and salicylic acid approximately 19 per cent.

No. 2,471,645, Detergent Composition, patented May 31, 1949 by Mark M. Morris, Berkeley, and Annette K. Kleeman, San Francisco, Calif., assignors to Clorox Chemical Co., Oakland, Calif., a corporation of Delaware. An aqueous household cleaning solution is covered consisting essentially of water and the following three active ingredients in the following proportions by weight: an alkali metal hexametaphosphate—about five tenths per cent (0.5%) to two per cent (2.0%); triethanol amine—about five tenths per cent (0.5%) to two per cent (2.0%); wetting agent selected from the group consisting of alkyl aryl sulfonates, sulfonated alcohols, sulfonated castor oil and sulfonated soybean oil—about one tenth (1/10) the amount of the alkali metal hexametaphosphate; said solution having a pH of between about nine and two tenths (9.2) and ten (10).

Soap Additive

From 0.05 to five per cent by weight of tolyl ethyl valerate is added to soap. F. J. Soday, to United Gas Improvement Co. Canadian Patent No. 453,563.

Odorless Whale Oil

Whale oil in crude form is treated for nine hours with 10 per cent of its weight of sulfuric acid and twice more for equal periods with 20 per cent of its weight of the acid. The reaction mixture is cooled so that the temperature does not exceed 30-32°C. This treatment reduces the iodine number and increases the acetyl number. At the same time a certain breakdown occurs, which is accompanied by an increase in the acid number. The possible reactions are chiefly partial saponification of the train-oil fatty acid glycerides, addition of the sulfuric acid and formation of sulfate esters of hydroxy fatty acids, the formation of lactones and lactides, and of polyacid. The product of the sulfonation or of the fatty-acid distillate obtained from it has a pleasant odor, a white color, a tallow-like consistency, and is suitable for production of good-quality soft soap. J. Hetzer, *Seifensieder-Ztg.* 72, 4-6, 21-2.

SANITARY PRODUCTS
A SECTION OF SOAP

COME next December first, the end of the current fiscal year, and the name, Chemical Specialties Manufacturers Association, takes over in place of the National Association of Insecticide & Disinfectant Manufacturers. A milestone in the interesting history of this thirty-five year old association, the new name marks a broadly expanded plane of operations and the start of what we feel is a new era. The beginnings of this were noted particularly at the mid-year meeting in Chicago last month, — a wider program of activities, more closely attended meeting sessions, a more serious and attentive mien by its enlarged membership. All told, with the adoption of its new set-up, the CSMA becomes far better equipped to cater to the needs of its membership and its industry.

CARNAUBA wax research in the United States has received what is perhaps its greatest impetus thus far. The search for satisfactory carnauba substitutes has become more intensive than ever before. And, it is our feeling that in the not too distant future this may pay dividends to some floor wax manufacturers. Behind this new research impetus stands the variable quality of carnauba which has been shipped into the country during recent months and the difficulties which manufacturers have had in using it in the production of wax emulsions. Not only have grades been well scrambled in recent imports, but the basic character of much of the carnauba has been greatly changed. Whether this stems from deliberate sophistication, from changes in collection and refining methods, or from some other cause is yet to be determined.

Although technical men who have been studying the unusual and varying character of recent carnauba imports are loath as yet to express definite opinions, the fact remains that harassed users of carnauba are fast running out of patience. If the powers-that-be in Brazilian officialdom soon do not take drastic steps to correct the conditions behind these variable and faulty qualities, we fear that the goose which lays the golden eggs may find its demise imminent, and carnauba no longer a handy source of American dollars.

TROUBLE is brewing for a large number of manufacturers of insecticides, disinfectants, rodenticides and allied products. Mostly, these are smaller manufacturers, apparently unacquainted with the law, who as yet have not registered their products under the Federal Insecticide, Fungicide and Rodenticide Act, as required by that law, and who continue to ship in interstate commerce. We understand that there will be a speeding up of field operations by USDA in enforcing this law, and many of these manufacturers are going to learn the hard way.

Under the law, the deadline for registration of herbicides and rodenticides with the Department of Agriculture was December 25, 1947, and for insecticides, fungicides and disinfectants June 25, 1948, except that the Secretary of Agriculture, upon application, was authorized to exempt from registration for one year certain articles subject to the law. That period has now expired. In view of the time elapsed and the information distributed and aid given by USDA, it is logical to expect that attention hereafter will be focused on enforcement.

Accordingly, manufacturers should exercise every care to see that their products are properly formulated and labeled before shipment. Any unregistered product sold and shipped across a state line should be registered *immediately*. Those unfamiliar with the procedure should write to the Insecticide Division, U. S. Department of Agriculture, Washington, D. C. The penalties under the new 1947 law are much more severe than under the old 1910 act which it replaced.

DANGER AHEAD!

. . . for those who with insufficient knowledge or experience undertake to "make it themselves and save the manufacturer's profit" . . . a continuation of the exposition on jobbers who enter the manufacturing field in sanitation chemical specialties.

By Gordon N. Baird
President, Baird & McGuire, Inc.

A guest editorial written especially for this issue of SOAP & SANITARY CHEMICALS.

ONCE again I would like to bring to the attention of the industry conditions that are facing manufacturers today. Frankly and sincerely, they seem to have become worse in many respects than they were a year ago. I have had the privilege of calling on many distributors and suppliers within the past year and also attending various shows and displays. As a manufacturer, I can truthfully say that many distributors are not "playing ball" with the established manufacturer. I have said this before—many of the distributors today are straddling the fence, yet those very same distributors would be the first to become incensed if the manufacturer attempted the same thing. How absurd it seems when we realize that the distributor is not taking full advantage of his working hours by selling and distributing the quality products of the manufacturer which, in the long run, would yield the distributor greater long-range profits and eliminate innumerable headaches, many of which he has not yet encountered or even suspected.

The manufacturer is geared up to produce in bulk and it is common knowledge that large quantity purchasing and production spell economy. Manufacture is carried on under rigidly controlled conditions which have been determined by research and long experience. Raw materials are carefully selected and tested. Often times in the "manufacture" of his products, the distributor will buy from various sources. We all know, for example, that disinfectant raw materials do vary and, therefore, do not produce the same germicidal value on every batch. In fact, to go a little further, buying from a good reliable source, the same one each time, even those batches will vary as far as germicidal value goes, not only due to variation in raw materials but also because human error enters the picture every time a batch is compounded.

But this seems to be the least of the worries of the distributor. If the finished product looks good to them, it has passed their test. Of course, it is easy for these "manufacturers" to look at a product and see whether the coefficient is correct, whereas it takes a skilled technician forty-eight hours to determine a phenol coefficient. As a matter of fact how many of them know the meaning of the term "phenol coefficient"? Do they ever stop to wonder why the legitimate manufacturer has gone to such great expense in the testing of his raw materials and his products? Testing is a waste of time to these precocious people—that is until their products cross a state line and, like a bolt from the blue, they are faced with a USDA citation.

The established manufacturer has spent thousands of dollars on equipment. He has spent years determining the best methods of procedure for each individual product. Obviously, production cannot be transfered to a "back room" and yield the same results. If the distributor could only realize the knowledge and experience required, as well as the expense involved, he would understand that for years the manufacturer has done all in his power to aid his customer, thus enabling him to devote his entire efforts to his chosen field and the one for which he is fitted, *selling* —and today that is a real challenge. It does not permit time for the production of inferior products that will only serve eventually to injure the reputation of the distributor who fancies himself a chemist. The manufacturer is not some ogre hovering over the distributor conniving some means of luring profit from him. Rather he is striving to be a counselor, to the mutual advantage of each, following through from the testing of raw ma-

(*Turn to Page* 135)

Effect of Various Water Ions on the Bactericidal Properties of Quaternaries

By E. H. Armbruster and G. M. Ridenour*
School of Public Health, University of Michigan

IT is now general knowledge that some of the common water ions may adversely affect the bactericidal efficiency of quaternaries. This is particularly true of the water hardness causing ions, calcium and magnesium. The effect of these substances has been studied under laboratory testing conditions with no intent to duplicate field conditions.(1) Also no attempt was made to determine if the deleterious effect of these ions could be counteracted by some simple expedient. Additional researches have now given some further information on the action of the quaternaries in (1) the presence of various ions under conditions of testing simulating the field conditions more closely, and (2) possible means of increasing the efficiency of the quaternaries in hard waters.

It is the purpose of this paper to show the effect of some of the common water ions on the bactericidal properties of quaternaries, and a means of reducing the adverse effect of the hard water ions.

Effect of Common Water Ions

IN 1947, the National Sanitation Foundation sponsored a study (1) to determine the basic factors which might affect the efficiency of cationic sanitizers. This study primarily evaluated the influence of: temperature, organic matter, hydrogen ion concentration, and common water ions on the quaternaries, and in this way laid a ground work for future programs of study. In these studies a modified time concentration procedure was selected as the laboratory testing method best suited to give this information. This method in brief was as follows:

Large test tubes, 1" by 5", were seeded on the bottom with 1 ml. of culture to give a concentration of approximately 50 million organisms per ml. in the medication mixture. These tubes were placed in a temperature control water bath, and 10 ml. of the disinfectant to be tested were added on top. This was followed with a gentle shaking. At intervals of 15, 30, 60, and 120 seconds, 1 ml. samples were taken from the medication tubes with separate pipettes and transferred to the first dilution blanks which consisted of 9 ml. of a 3 per cent "Tween 20" and 0.2 per cent "Asolectin" neutralizing solution. The "Tween" - "Asolectin" combination was used to reduce bacteriostasis. (2) Nutrient agar was used as the plating medium.

Eberthella typhosa (Hopkins strain) was used as the test organism in studies on the effect of the various factors on bactericidal efficiency. E. typhosa was selected because it provided an official test organism of standardized resistance for disinfection studies.

Studies were made by adding different common water ions to the sanitizing mixture. These included the cations, calcium, magnesium, potassium and sodium. Anions tested were sulfates, nitrates, chlorides, carbonates and normal phosphates. All anions were added as sodium salts.

The pH was approximately neutral in all cases except in the tests where phosphates and carbonates were used. The results of these tests for one of the better quaternaries are found in Figures I and II on following page.

Examination of these data show that the sodium and potassium cations demonstrated no significantly measurable effect. However, calcium and magnesium exerted a definite and appreciable effect by decreasing the bactericidal potency of alkyl dimethyl benzyl ammonium chloride. As little as 40 p.p.m. of calcium or magnesium reduced the lethal action of 35 p.p.m. of this compound from 99.9 per cent to 50 per cent. The addition of calcium ions beyond 40 p.p.m. did not drop the germicidal efficiency of this solution much lower than 50 per cent. It was found, though, that with the addition of more quaternary to a fixed amount of calcium, a satisfactory kill could be obtained.

There were no adverse effects shown by any of the anions up to a 70 p.p.m. ion concentration. In fact the phosphate and carbonate compounds increased the reduction in viable organisms.

More recent work using this same testing method has indicated that the ferric ion is also extremely effective in interfering with the germicidal action of the quaternaries. As little as 10 p.p.m. of this ion in a 200 p.p.m. solution of alkyl dimethyl benzyl ammonium chloride decreased its killing action to a point where it is no longer acceptable by this test. Fortunately a water with this much ferric ion is unsatisfactory for general usage and could probably not be used any way without removal of the ion. The ferrous ion apparently effects little or no change in the action of the quaternaries.

It was also found that the magnitude of the effect of all of these inhibitory ions varied with the type of quaternary used. Therefore, there was no one practical concentration indi-

*Before 35th Mid-Year Meeting National Assn. of Insecticide & Disinfectant Mfrs., Chicago, June 13, 1949.

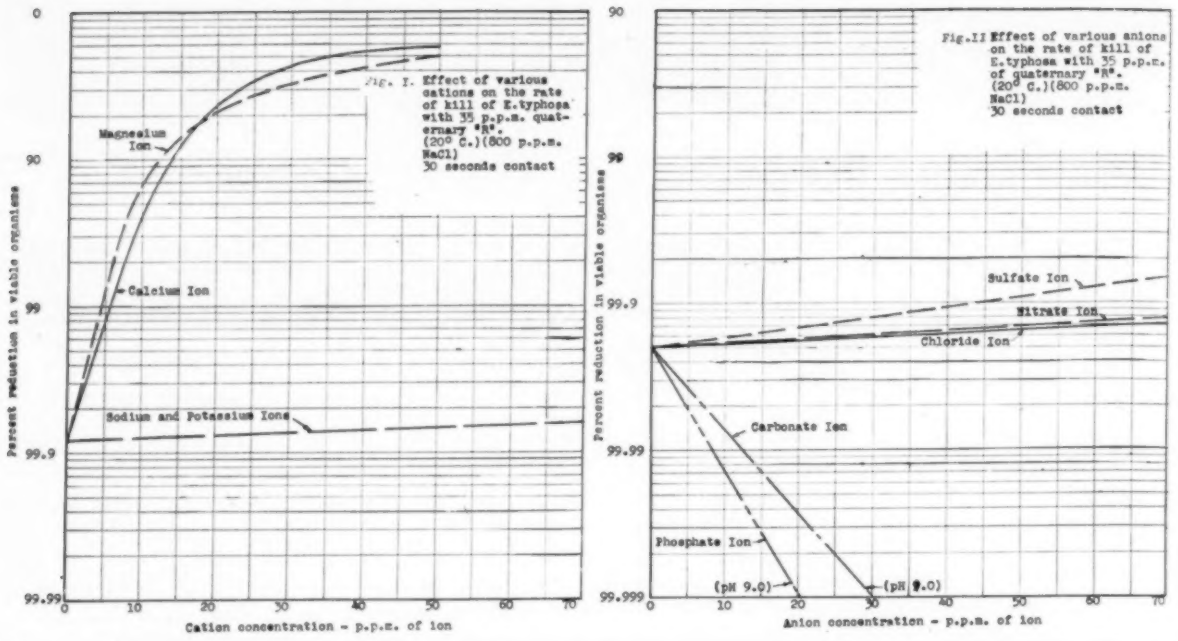


Fig. I. Effect of various cations on the rate of kill of E.typhosa with 35 p.p.m. quaternary "R". (20° C.)(600 p.p.m. NaCl) 30 seconds contact
Magnesium Ion
Calcium Ion
Sodium and Potassium Ions
Percent reduction in viable organisms
Cation concentration - p.p.m. of ion
Fig.II Effect of various anions on the rate of kill of E.typhosa with 35 p.p.m. of quaternary "R". (20° C.)(600 p.p.m. NaCl) 30 seconds contact
Sulfate Ion
Nitrate Ion
Chloride Ion
Carbonate Ion
Phosphate Ion
(pH 9.0)
(pH 9.0)
Percent reduction in viable organisms
Anion concentration - p.p.m. of ion

cated for all quaternaries that would provide equal effectiveness in waters of a given hardness.

The type of testing procedure used in these fundamental studies provides an excellent means of measuring factors affecting the bactericidal action of quaternaries, but it does not simulate field conditions nor actual use concentrations necessary to produce proper sanitization.

In order to study quaternary performance in hard water under conditions that more nearly approached the field use, a performance type test was utilized. In this procedure chemically clean and sterile water glasses were dipped in a contaminating bath consisting of a suspension of *Staphylococcus aureus* in physiological saline. *Staph. aureus*, an organism readily found on soiled utensils, was chosen as test organism because its pigment production made it easily identifiable on agar plates. It also was able to withstand drying on the glasses much better than the Gram negative test organisms available.

The sanitizing bath consisted of 8 liters of distilled water made up to desired strength with quaternary to be tested. This bath was adjusted to a pH of 7.4 so that all compounds could be tested at the same original pH. The temperature was held at 20 °C.

In the testing procedure, glasses were contaminated by dipping in the contaminating solution, allowed to drain rim down on blotting paper for 30-60 seconds and then turned rim up and the film allowed to dry for 20-30 minutes.

The soiled glasses were subsequently dipped in the sanitizing bath for 15 seconds and swabbed immediate-

TABLE I

Bactericidal action of various sanitizers against *Staphylococcus aureus* as measured by performance test with 15 second exposure at 20° C.

		alkyl dimethyl benzyl ammonium chloride		*para-di-iso butyl ethyoxy dimethyl benzyl ammonium chloride*		*acyl-colomino-formyl-methyl pyridinium chloride*		*alkyl dimethyl ethyl ammonium bromide*	
Test Conditions	*ppm Sanitizer*	*Average Count per Glass*	*% Reduction*	*Average Count per Glass*	*% Reduction*	*Average Count per Glass*	*% Reduction*	*Average Count per Glass*	*% Reduction*
Distilled Water	Control	40,000		17,500		20,200		11,000	
	100	410	99.0	180	99.0	1,400	93.1	292	97.3
	150	45	99.9	60	99.7	650	96.8	16	99.9
	200	30	99.9	3	99.9	730	96.4	10	99.9
100 ppm Calcium in Sanitizer	Control	13,000		16,100		19,300		14,500	
	100	580	95.5	425	97.4	6,900	64	1,400	90
	200	4	99.9	9	99.9	1,200	91.4	63	99.6

TABLE II

Effect of Various Hard Water Correcting Agents Used With Alkyldimethyl Benzyl Ammonium Chloride as Measured By the Performance Test

Correcting Agent	*pH of final sanitizing solution*	*% Kill 100 ppm Sanitizer*	*% Kill 200 ppm Sanitizer*
Sodium hexa meta phosphate	5.0	Under 50	Under 50
Sodium pyro phosphate	7.1	95	99.9
Sodium bicarbonate	7.4	99.0	99.9
Sodium tetra borate	8.2	99.2	99.9
Tri sodium phosphate	9.1	99.4	99.9
Sodium carbonate	9.5	99.5	99.9
	8.0	99.1	99.9
Sodium Hydroxide Control	9.0	99.3	99.9
None	7.0	95	99.9

100 ppm of this sanitizer in distilled water at pH 7 will produce a 99% kill.

ly upon removal by the standard swabbing technique ([3]) of 5 glasses per 5 ml. swab vial. Two hundred p.p.m. of sodium naphuride ([4]) was used as neutralizer in the swabbing solution. Plating was done on nutrient agar containing 1 per cent "Tween 20" and 100 p.p.m. of "Asolectin."

Data are presented in Table I for four chemically different quaternaries measured by this procedure. All compounds were tested in both the presence and absence of 100 p.p.m. of calcium. In the soft water an acceptable utensil was produced when the sanitizer concentration reached 150 p.p.m. for any of the three better quaternaries. In the water containing 100 p.p.m. calcium, 200 p.p.m. of these same compounds were needed to produce an acceptable kill. A comparison of the killing action in the hard and soft water with 100 p.p.m. of the better sanitizers demonstrated that the hardness lowered the germicidal efficiency appreciably as would be expected from previous studies ([1]). The effect of hard water on the better quaternaries can be at least partially overcome through the addition of a sufficient amount of quaternary to the sanitizing bath. For example, with alkyl dimethyl benzyl ammonium chloride, 200 p.p.m. was sufficient to produce a sanitized utensil in a water containing 260 p.p.m. hardness due to calcium and magnesium, as against 150 p.p.m. in the absence of water hardness, and in the hard water sanitization was secured with a practical concentration of 200 p.p.m. of the better quaternary.

Effect of Alkaline Water Softening Agents on Efficiency of Quaternaries in Hard Waters

REFERRING to Figures I and II, the fact that the carbonate and phosphate compounds demonstrated an increase in the antibacterial activity of the quaternaries suggested a simple and inexpensive means of overcoming the detrimental effect of hard waters. More studies were hence made along this line. For these studies a test water was modified to make it more typical of an average hard water and the effect of combining softening compound with the sanitizer was studied. The test water contained 75 p.p.m. calcium, 25 p.p.m. magnesium and 2 p.p.m. of ferrous iron and gave a soap hardness of approximately 260 p.p.m. as $CaCO_3$. The performance test was used so that the results could be tied in more easily with field use concentrations and conditions. Among the compounds examined for their ability to nullify the effect of water hardness were: sodium carbonate, sodium bicarbonate, trisodium phosphate, sodium pyrophosphate, sodium hexametaphosphate, and borax. The softening agents were added to the quaternary before addition to the hard water in a concentration sufficient to give a 500 p.p.m. concentration in the sanitizing bath. A pH control was run by adding sufficient sodium hydroxide to produce pH levels of 8 and 9. This data is presented in Table II, and is representative of the better quaternaries.

The germicidal efficiency of the quaternaries was significantly increased with the addition of alkaline water softening agents. For example, a concentration of 100 p.p.m. of quaternary in the presence of sodium carbonate produced a slightly better kill in hard water than did a solution of the same strength in soft water without the addition of the carbonate. The greatest increase in efficiency occurred with those compounds producing the highest pH, indicating that the H-ion, concentration apparently plays a major role. This fact is substantiated by comparison with the controls where pH of 8 produced a 99.1 per cent kill and a pH of 9 produced a 99.3 per cent kill against a 95 per cent kill at a pH of 7. As much as 2 p.p.m. of iron did not interfere significantly at these higher pH levels.

It was observed that sodium hexametaphosphate seemed to precipitate the quaternary, thus accounting for the great reduction in this instance.

Summary

THE effect of the various common water ions on the bactericidal properties of quaternaries and means of eliminating the harmful effects was investigated by two laboratory procedures. One method was the time-concentration test with no intent on duplication of field conditions. The second test was devised to simulate field conditions of contamination and quaternary concentration more closely than the time-concentration procedure. By either procedure quaternaries were shown to decrease in sanitizing efficiency with an increase in the calcium or magnesium ions. Ferric iron also decreased the sanitizing efficiency. Under the second test method higher concentrations of quaternaries were needed for equal sanitizing efficiency. For instance, whereas 35-40 p.p.m. of quaternary was needed by the time-concentration test, approximately 100 p.p.m. of the same compound was needed by the performance test for the same kill in the absence of the water hardness ions. The performance test

(*Turn to Page* 135)

"Dairy Insect Control... offers no problems that cannot be met Safely and Effectively"

***Pyrenone-type sprays** for dairy cattle give better protection, not only against horn flies but also — if properly formulated and used — against stable flies and tabanids as well.

Pyrenone-type emulsions and wettable powders provide residual effect and fly protection in the dairy's milk room and in other dairy, farm, or ranch buildings. And Pyrenones control roaches and many other insects too, including cheese mites.

Pyrenones are recognized as *non-hazardous*. Properly formulated insecticides based on Pyrenones are *equally safe*.

Pyrenones may be formulated as water emulsion concentrates, wettable powders or oil-type sprays.

Contact the nearest U.S.I. office for formulation and labeling data.

*Pyrenone is a registered trade-mark of U.S.I. It designates combinations of piperonyl butoxide and pyrethrins.

U.S.I. INDUSTRIAL CHEMICALS, INC.
60 East 42nd Street, New York 17, N. Y.
Branches in all principal cities

In Canada: Standard Chemical Co., Ltd., 99 Vanderhoof Avenue, Leaside, Toronto 17, Ontario

DDT Developments

Further light on recent DDT failures against the house fly . . . DDT bans discussed

By E. F. Knipling*

Chief, Division of Insects Affecting Man and Animals
Bureau of Entomology and Plant Quarantine, USDA

AT the time of the December 1948 meeting of the N.A.I.D.M. there was great concern among the insecticide industry, entomologists, and the public over the failure of DDT to provide the usual high degree of control for the house fly. Various reasons for the failures were discussed at that time by the writer. Although a number of factors were discussed, data were presented which indicated that resistance to DDT acquired by flies in various areas was perhaps the major cause of the failures where they occurred.

The proved phenomenon of resistance to DDT developed among house flies in nature, after only two or three years of extensive use of this insecticide, is of great significance. It is not only important in connection with the control of this insect but in the entire field of entomology. However, the resistance problem, temporarily at least, has been considered of secondary importance because another development has further complicated the problems associated with the control of the house fly and certain other insects. I have reference to the recent pronouncement of the Food and Drug Administration in which that agency served notice that the presence of DDT in milk would be considered contrary to the provisions of the Food, Drug, and Cosmetic Act.

Investigations by the Oklahoma Experiment Station, the Bureau of Entomology and Plant Quarantine, and various other institutions have shown that milk becomes contaminated with DDT when the insecticide is applied on dairy cattle. The Bureau has found that milk in some cases becomes contaminated following the treatment of barns. For these reasons the Bureau has recently changed its recommendations for the use of DDT for fly control on milk cows, in dairy barns, and in other situations where milk is processed.

The banning of DDT for certain insecticidal uses because of its potential health hazard created an acute problem in fly control among dairy interests. Naturally there was a period of great confusion and uncertainty especially among various governmental agencies, State institutions, the insecticide industry, as well as the public in general.

Although these adverse developments have focused on DDT, they have far reaching implications. House flies resistant to DDT are also more difficult to kill with certain other insecticides and there are indications that flies might also develop resistance to substitutions. The question of potential health hazards associated with the use of DDT on dairy cattle and in dairy barns also applies for the present to certain other materials which are promising for the control of flies.

The purpose of this paper is to summarize briefly some of the recent investigations on the house fly. The present recommendations of the Bureau of Entomology and Plant Quarantine for controlling flies on the farm will also be discussed. Insect control on dairy cattle and other livestock will not be included in this discussion.

Milk Contamination with Insecticidal Chemicals Following Barn Treatment

ALTHOUGH the justification for banning DDT for application to dairy cows was not questioned seriously by most entomologists, the inclusion of dairy-barn treatments in the recommendations against its use for fly control created great controversy. At the time the safety of the use of DDT in dairy barns was first questioned, the evidence of positive milk contamination with insecticides resulting from barn treatments was rather limited.

However, as more information has been obtained relative to the pharmacological properties of DDT when ingested by dairy cattle, we have a better appreciation of the ease with which milk can become contaminated when dairy barns are sprayed. Those who are familiar with spraying methods that have been generally practiced in barns now realize that the DDT in many cases was applied in such a way as to permit some ingestion of the chemical by dairy cows subsequently housed in treated barns.

It is hard to say precisely how barn treatments might lead to contamination of milk with insecticidal chemicals. However, at least three possible ways suggest themselves—(1) by direct contamination of feed, feed troughs, or watering cups which might lead to ingestion of the chemical by the cows and eventual excretion in the milk; (2) by excretion of DDT in the milk due to intake of the chemical by cows through breathing vapors or by eating particles which flake off the treated surfaces; (3) by contamination of the milk or milking utensils with the chemical from hands or clothing of the operator or by settling of DDT particles which might be air borne due to wind currents or by flaking from walls and ceilings.

Investigations thus far with DDT and TDE indicate that the first method mentioned can readily lead to milk contamination when the insecticide is applied in the way most dairy barns are treated. This was indicated on the basis of studies conducted by

* Before 35th mid-year meeting, N.A.I.D.M., Hotel Drake, Chicago, June 13, 1949.

Warning!

Are your insecticides, fungicides, disinfectants, herbicides and rodenticides registered with the U. S. Department of Agriculture? Are they also registered in the states in which you do business?

UNDER the terms of the Federal Insecticide, Fungicide and Rodenticide Act, which was enacted by Congress and approved on June 25, 1947, the deadline for the registration of herbicides and rodenticides with the U. S. Department of Agriculture was December 25, 1947, and for insecticides, fungicides and disinfectants June 25, 1948, except the Secretary of Agriculture, upon application, was authorized to exempt from registration for a period of one year articles subject to the Act under certain conditions as specified by Section 15 of the Act, which period has now expired.

There are still many of these products being shipped interstate that have not been registered, and the shippers of such products are, of course, subject to the penalty provisions of the Act.

This new Federal Law is much broader in its scope than the old Insecticide Act of 1910 and some of its provisions, particularly those requiring "poison", "caution" and "warning" labeling, required much study and investigation to determine and decide upon statements that would be adequate to protect the public from injury through the handling and use of products covered by it. The Insecticide Division of the Department of Agriculture, which administers this Act, recognized the difficulties involved and has been very cooperative and helpful in aiding manufacturers in preparing labeling.

In view of the time elapsed, and the information distributed and aid given, it can be expected that more attention will now be given the enforcement provisions of the Act, and manufacturers should exercise every care to see that their products are properly formulated and labeled before shipment. The penalties for violation under the new law are much more severe than under the law which it replaced.

The above statement was prepared for publication by Dr. C. C. McDonnell, well-known Washington consultant and retired Chief, Insecticide Division, USDA, whose long experience and closeness to the Washington scene make this warning unusually significant.—The Editors.

Claborn, Beckman and Wells of the Kerrville, Tex., Laboratory.[1] [2] Subsequent tests, more carefully controlled, have been carried out at Kerrville in which four dairy barns were sprayed without covering feed troughs. In applying the spray, care was taken not to treat the feed troughs directly, but the stanchions, walls near the troughs, and the ceilings above them were treated. Consequently some contamination of the troughs could hardly be avoided. This method of application is assumed to be typical of barn spraying as generally practised in the past. Milk from cows subsequently milked in three of the four barns showed DDT present on the second day in amounts ranging from approximately 0.5 to 1.5 p.p.m. Less than 0.1 p.p.m. of DDT was detected in milk from the cows in the fourth barn. However, it was learned later that the dairyman on his own initiative cleaned the feed troughs in this barn thoroughly with water from a hose after the barns were sprayed. A fifth barn was treated wherein the tops of feed troughs were covered, but the front was unprotected which permitted some spray drift to enter and settle in the troughs. DDT in the amount of about 0.5 p.p.m. was detected on the second day in the milk from the dairy herd milked in this barn. Two barns were sprayed after feed troughs and stanchions and walls near the troughs were completely covered. No significant amount of DDT was detected in the milk from herds milked therein.

In order to determine if sufficient DDT might be inhaled by cows to result in the excretion of the insecticide in the milk, a special test was conducted by the Kerrville laboratory in which a dairy cow was housed in a DDT treated barn. The walls and ceiling of the barn, 32 x 16 x 7½ feet, were treated at the rate of 200 mg. of DDT per square foot employing a wettable powder suspension. A special pen 8 x 12 feet was then constructed in the barn and a cow placed therein each night for six consecutive nights. It was not possible for the cow to reach any treated portions of the barn and the floors were covered during spraying so that the floors were also free of direct contamination with DDT. Analysis of milk from the cow prior to exposure in the treated barn showed the milk to be free of DDT. Milk from the cow obtained on the 1, 2, 3, 4, and 6th day after exposure also proved negative when analyzed for DDT. Since the exposure of the cow in the barn was for a considerably longer period than can be expected for dairy herds routinely managed on the dairy farm, it seems reasonable to eliminate inhalation of DDT by the animals as a source of milk contamination with DDT.

No information is available to suggest how important direct contamination of milk or milking utensils might be as a source of insecticidal chemicals in the milk. However, milk samples were taken from individual cows in some of the tests reported above, taking extreme care to avoid possible contamination of milk by the operator and employing containers known to be free of DDT. The average DDT content of the milk was essentially the same as that for the herd sample obtained with milking machines operated by the dairyman.

Further investigations will be required to establish definitely if dairy barns can be treated in such a way as to avoid contamination of milk with insecticides such as DDT, however, these preliminary tests suggest this possibility.

Recent Investigations on Chemically Resistant House Flies

STUDIES have been continued to gain more information on the question of resistance of house flies to DDT and other insecticides. The studies have been carried out largely by the Orlando, Fla., laboratory which is supported by funds provided by the Department of National Defense. The investigations have confirmed previous reports of laboratory and research institutions, including the Citrus Experiment Station, Riverside, Calif., New Jersey Agricultural Experiment Station, New Brunswick, N. J., U. S. Public Health Service, Washington, D. C., and various commercial concerns.

There is no question about the occurrence of strains of house flies highly resistant to DDT. A highly DDT-resistant strain has been developed by the Orlando laboratory. A strain collected at Bellflower, Calif. by R. B. March and R. L. Metcalf[2] is also extremely resistant to DDT and its analogs, TDE and methoxychlor. Laboratory tests at Orlando have shown that the Bellflower strain, supplied by the Citrus Experiment Station, has an LT-70[3] approximately 150 times that of non-DDT resistant strains. The special colony at Orlando at the time of the tests had an LT 70 approximately 200 times that of a non-resistant strain. The Orlando special strain on the basis of time required to kill near 100 per cent of the flies shows an even greater degree of resistance over the non-resistant strain than is indicated on the basis of the LT 70.

It is obviously of great practical importance to determine if DDT resistant strains of house flies lose their resistance to DDT when they are not subjected to further exposure to DDT. In order to obtain data on this point, about six colonies of house flies, collected in nature and 20 to 50 times as resistant to DDT as non-resistant strains when first collected, and a branch of the special resistant strains developed in the laboratory was bred through successive generations without further exposure to DDT. Some of the flies from each colony of each generation were tested to determine the degree of resistance to DDT. The results of these investigations indicate that there is a tendency for the flies to lose their resistance when they are no longer exposed. However, the extent of the loss in resistance is extremely variable in different colonies and most of the flies show some resistance to DDT after as many as six generations without exposure to DDT.

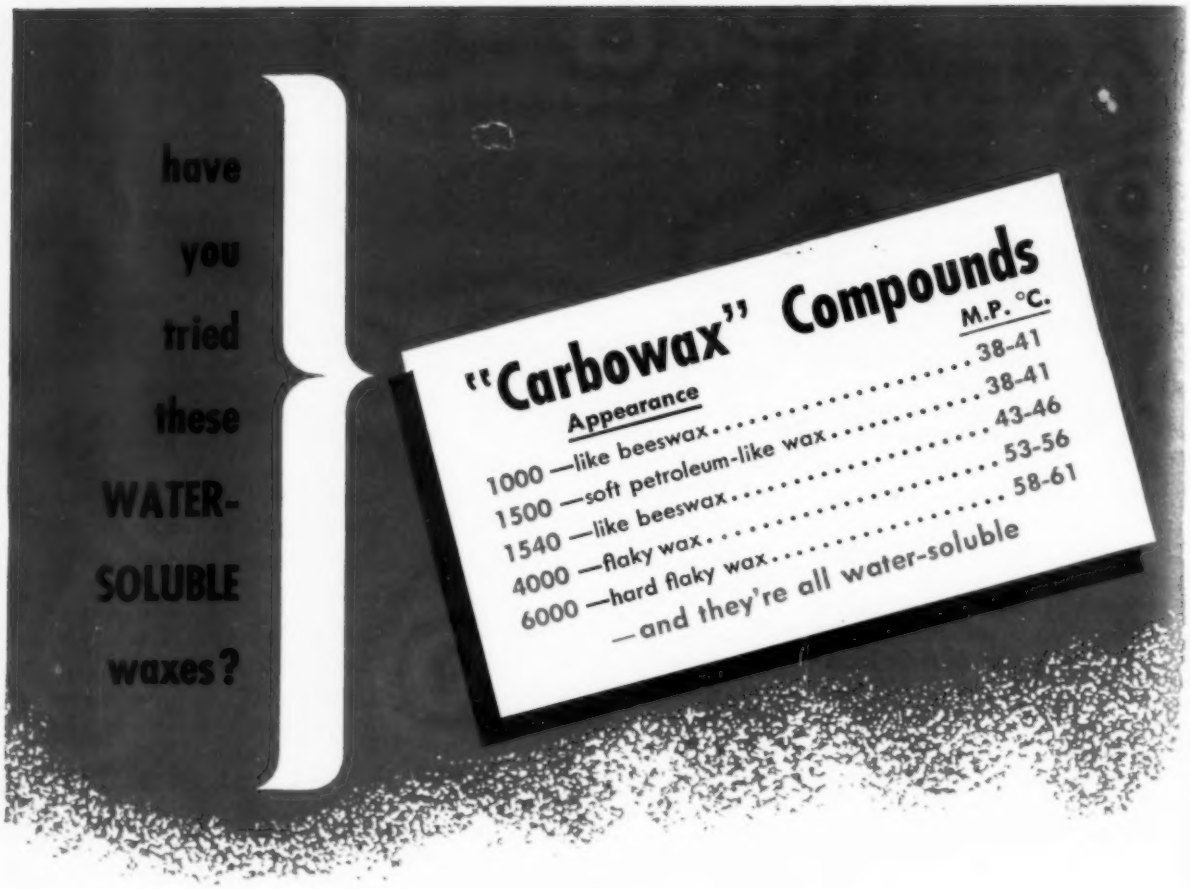
Additional studies have also

[1] A paper entitled "The Excretion of DDT and TDE in Milk From Cows Treated With These Insecticides for Fly Control" was read before the 1949 meeting of the Texas Entomological Society. The paper is pending publication in the *Journal of Economic Entomology*.

[2] The studies concerned with milk contamination with insecticidal chemicals were conducted as a part of the Research Marketing Act Project on the toxicology of insecticides.

[2] News Letter No. 38—Preliminary Laboratory and Field Studies of DDT Resistant Houseflies in Southern California. Issued February 1, 1949.

[3] Time of exposure in minutes required to produce 70 per cent mortality.



These solid polyethylene glycols have special utility because of the following properties:

White in color—transparent in solution

Inert—to many pharmaceuticals and chemical reagents

Soluble—in water and most organic compounds (except aliphatic hydrocarbons)

Versatile—can be blended with each other or with other glycols, alcohols, and esters to meet your specific requirements

CARBIDE and CARBON
CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street New York 17, N. Y.

Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

"CARBOWAX" is a registered trade-mark of C&CCC.

Typical Uses

Cosmetics—improved consistency and water-solubility of CARBOWAX compounds make possible better appearance and performance for many types of cream-bases.

Ointments—water-solubility, blandness, and inertness frequently promote the action of ingredients in pharmaceutical preparations. (Suitable for use in many products for topical application.)

Many Other Uses

The water solubility and inertness of CARBOWAX compounds offer decided advantages in the manufacture and use of water paints, paper coatings, water-soluble crayons, polishes, ceramics, adhesives, and metal drawing compounds.

Would you like to have more information on these versatile, water-soluble waxes? Write for the booklet "CARBOWAX Compounds" which contains detailed information on physical properties, suggested uses, and formulations. When writing, please address Dept. 0-7

been conducted to determine the degree of resistance, if any, of the DDT resistant strains to other insecticides. The details of these studies will be reported by the investigators at the Orlando laboratory at some future date. However, some of the results are briefly summarized.

Strains of flies showing relatively low resistance (of the order of 10 to 20 times that of non-resistant strains) showed no measurable resistance to gamma benzene hexachloride or chlordane when exposed to residual deposits of these insecticides. However, at Orlando in one series of tests the highly resistant laboratory strain showed a ratio of 80 to 1 over the non-resistant strain on the basis of 70 per cent mortality. The ratios of resistance to other insecticides of the two strains were as follows: methoxychlor, 13 to 1; chlordane, 4 to 1; and gamma benzene hexachloride, 2.5 to 1. In another series of tests employing space sprays, the approximate ratios were as follows: DDT, 90 to 1; methoxychlor, 9 to 1; chlordane, 7 to 1; gamma benzene hexachloride, 4 to 1; compound 497, 4 to 1: pyrethrum-piperonyl butoxide combination, 1.5 to 1; and pyrethrins alone, 1 to 1. Practically all strains of flies showing high resistance to DDT also show some resistance to other insecticides, especially to methoxychlor.

In general it may be stated that extremely variable results are obtained with any given insecticide from day to day and generation to generation with the insecticide resistant strains of flies. On the basis of these variations it might be logical to expect variable results in actual practice not only with DDT but also with some of the other available insecticides which may be used as a substitute.

The fly season has not yet advanced sufficiently to determine what will be the trend this season insofar as resistance to DDT is concerned. However, tests initiated in Florida since March indicate that flies in that area are generally resistant to DDT, but the magnitude of resistance varies considerably from dairy to dairy.

Table I.—Residual Spray Tests for House Fly Control

Treatment and Dosage (Milligrams of Insecticide Per Square Foot)	*Per Cent Reduction of Flies After—*					
	7 *Days*	14 *Days*	21 *Days*	28 *Days*	35 *Days*	42 *Days*
DDT (200):						
Emulsion	55	23	27	..	..	..
	95	97	91	89	91	86
Wettable powder	34	16	7	10	..	..
	79	67	89	97	86	82
Methoxychlor (200):						
Wettable powder	100	99	96	98	..	92
	99	87	88	85	81	66
Emulsion	81	83	Re-treated by owner			
Chlordane (emulsion):						
200	98	97	89	99	..	100
	94	98	..	99	..	99
	100	100	99	95	94	67
	98	99	99	99	99	99
100	99	89	96	86	93	89
Gamma benzene hexachloride (wettable powder):						
50	99	99	96	90	86	67
	83	89	1 Re-treated by owner			
25	98	88	95	98	97	98
	99	94	84	77	78	57
Pyrethrins 5 + piperonyl butoxide 50 (emulsion)	27	25	Re-treated by owner			
	39	29	20	..	..	..
Pyrethrins 10 + piperonyl butoxide 100 (emulsion)	87	Re-treated by owner				
Compound 497, 50 mg. (emulsion)	83	85	Re-treated by owner			
	97	95	99	99	94	98
DDT 100 + methoxychlor 100 (wettable powder)	99	98	90	93	93	88
DDT 120 + chlordane 80 (emulsion)	73	91	95	89	81	79

Practical Field Tests with Various Insecticides

TESTS with a number of insecticides and insecticide combinations have been conducted in Florida by the Orlando, and Savannah, Ga., laboratories in efforts to obtain some early data on their performance as residual sprays for house fly control. Although the number of tests with the various materials is limited, the results are presented at this time. Further tests are under way or planned, and the investigators who are carrying out the practical field tests will prepare more detailed reports at a later date.

The data thus far obtained in the preliminary field tests are shown in Table 1. In determining the degree of control obtained, pretreatment counts were made at least two times prior to applying the treatment. Most of the tests were conducted in dairy barns where flies were numerous and where unsatisfactory results were reported for DDT. Fly counts were made by exposing a 50-50 mixture of maltine and water in petri dishes covered with one-quarter inch mesh hardware cloth, 6 x 12 inches in size. Exposure of this bait was made at three locations in each dairy. The bait was exposed for 30 seconds and the flies disturbed between readings which were made 5 to 10 times in each location and averaged for the index for each of the three locations.

Post-treatment counts were made in the same manner. The results were checked on the first, third, fourth, and seventh days after treatment and at weekly intervals thereafter. However, results are given for the weekly counts only.

The data in the table show that in general methoxychlor, chlordane, or gamma benzene hexachloride treatments greatly reduce the fly populations after treatment. However, the duration of effectiveness of these materials probably will not approach the

(*Turn to Page* 131)

Floors stay young and lovely when their regular beauty bath is with gentle FULSHINE Ap* . . . alkali-proof cleaner. FULSHINE's speedy action leaves floors brand-new clean and softly glowing with a satin lustre.

High detergency, abundant suds and fast, safe action are headline features of this special formula neutral cleaner that is tailored to do a yeoman's job in hard or soft . . . hot or cold water.

There's not a chance for floor damage because of harsh alkali action when FULSHINE is on the job. And . . . even though wax-free, FULSHINE imparts an attractive lustre. No need for rinsing. Economical, too . . . it goes so far.

* Registered U. S. Pat. Off.

You can't miss with FULSHINE. Write today for full information, sample and prices.

Fuld Brothers INC.

702 South Wolfe Street, Baltimore 31, Md.
1256 Factory Place, Los Angeles 13, Calif.
New York Sales Office: 55 West 42nd Street

Waxes, Cleaning Compounds, Potash Soaps, Deodorants, Disinfectants, Floor Seals and Treatments, Insecticides, Polishes, Sanitary Appliances.

CARNAUBA WAX - *Adulterated?*

By A. G. Bowers*

Hunt Manufacturing Co.

CARNAUBA wax — adulterated? In 16 years of water emulsion wax manufacture this has been a constant and perplexing problem. Carnauba wax is of vegetable origin, varies greatly in outward appearance, depending on the location of the tree, the weather, the picking and method of processing. There are nowhere in the reference literature accurate methods of analysis for carnauba wax. To determine whether a material such as this is adulterated is a difficult problem.

After years of usage of wax, I have come to the conclusion that the wax manufacturers are receiving four different kinds of carnauba wax.

1. Carnauba wax of pre-war quality.
2. Carnauba wax adulterated with various other ingredients.
3. Carnauba wax unlike pre-war carnauba wax due to different methods in picking and refining in Brazil.
4. Carnauba wax, whose composition may be altered by refining and bleaching methods.

What was carnauba wax of pre-war quality? Most of the wax purchased of various importers would make up a standard formula day in and day out. While an occasional batch might vary in gloss or color, batch after batch did not fail to emulsify, nor did a whole shipment fail to produce results without major alteration of your formula. We occasionally received samples whose alcohol extracts were high in rosin or whose melting points were lower than 82°C. Usually these waxes were quoted a few cents under the market. Such adulterations were easily checked by the above methods, but to speed up the checks and to catch other possible adulterants, we tried the use of the Cleveland open cup flash point tester. This proved to be a very handy tool. The melting points of combinations of ingredients with carnauba wax could be artificially raised by heating with ethyl cellulose. The flash point would be lowered.

The Cleveland open cup flash point method that we use is outlined in the Standard Methods of Analysis of the Oil Chemists Society, Page 41. If this procedure is followed carefully, reproducible results can be obtained. Care should be taken to have no drafts in the room which would dilute the fumes before they ignite. The sample should be heated at a constant rate 9-11°F. per minute. These are the common sources of error.

Prior to 1942 we have no flash point tests on record of less than 585°F. A list of the highest and lowest flash point tests of carnauba wax of various grades is given in Table I.

TABLE 1

#1 Yellow	600-620°F.
#2 Yellow	600-610°F.
#3 N.C. Refined	585-595°F.

If you wish to go back many years for the flash point of carnauba wax, a reference can be found *Chem. Zeit*, 1909, 1275 lists the flash point at 310°C. (590°F.).

Carnauba waxes tested since 1942 have shown a tendency to lower flash points as shown on Table No. 2. These are those flashing at 575 or below on 65 lots tested.

TABLE 2

9/25/45	#3 N. C. Crude	575° F.
7/29/46	#3 N. C. Refined	572° F.
5/6/47	#3 N. C. Refined	572° F.
9/15/47	#3 N. C. Refined	509° F.
10/20/47	#3 N. C. Refined	536° F.
10/27/47	#3 N. C. Refined	543° F.
11/3/47	#3 N. C. Refined	Sputter 445 to 575 flashed
11/20/47	#3 N. C. Refined	536° F.
12/30/47	#3 N. C. Refined	554° F.
1/19/48	#3 N. C. Refined	558° F.
3/29/48	#3 N. C. Refined	568° F.
9/30/48	#3 N. C. Refined	542° F.
12/10/48	#3 N. C. Refined	554° F.
2/2/49	#3 N. C. Refined	546° F.
3/29/49	#3 N. C. Refined	564° F.
4/28/49	#3 N. C. Refined	570° F.

What does this flurry of low flash points in carnauba wax mean? Whether this is due to adulteration or to different methods of collecting and refining wax we do not know. The thing we do know is that in certain of our formulas these waxes would not make a stable emulsion regardless of the usual formula adjustments. In other wax formulae with more efficient emulsifiers, emulsions were formed but the resulting waxes were sticky and when stored at 120°F. for a few days set up into jells. These results are shown on Tables No. 3 and No. 4. In Table No. 3 the results of two lots of wax with low flash points on stickiness compared to wax made by the same formula using 590° flash point wax.

TABLE 3

Carnauba Wax Used	*Lbs. Pull*	*Temp.*	*Humidity*
536° F.	14#	74°	40
543° F.	12#	74°	40
590° F.	7#	74°	40
595° F.	7#	74°	40

The method of measuring tack of the wax is as follows. Linoleum strips are coated with two coats of wax. The wax is dried over night. A clean woven wool pad of polishers felt is placed on the wax. A block of wood covers the felt. The block contains an eye screw. A 20# block of lead is placed on the wood cover. A 15# capacity spring scale is attached to the eye screw. Two minutes are allowed to lapse between putting on the weight and checking the pounds pull necessary to move the felt pad. We have used this apparatus for 8 years and it gives

(*Turn to Page* 129)

* Paper before 35th mid-year meeting, National Association of Insecticide & Disinfectant Mfrs., Chicago, June 13, 1949.

THIS LABEL GUARANTEES

Quality

it identifies the Genuine

- Roccal is the original quaternary ammonium germicide.
- It is laboratory tested and controlled. Look for control number.
- Use only Roccal in your formulations to insure accurate potency.

Now Offered to Manufacturers in 50% Concentration

Sample and Literature on request SPECIAL MARKETS—INDUSTRIAL DIVISION

WINTHROP STEARNS

Winthrop-Stearns INC.

DEPT. M-79 170 VARICK STREET, NEW YORK 13, N. Y.

Dispensers above are of the liquid type. At extreme left is Moore Brothers' No. 425 with opalescent globe; center is Bobrick's new model featuring plastic reservoir; at right is Palmer Fixture Company's liquid soap dispenser with clear glass globe.

Soap Dispensers

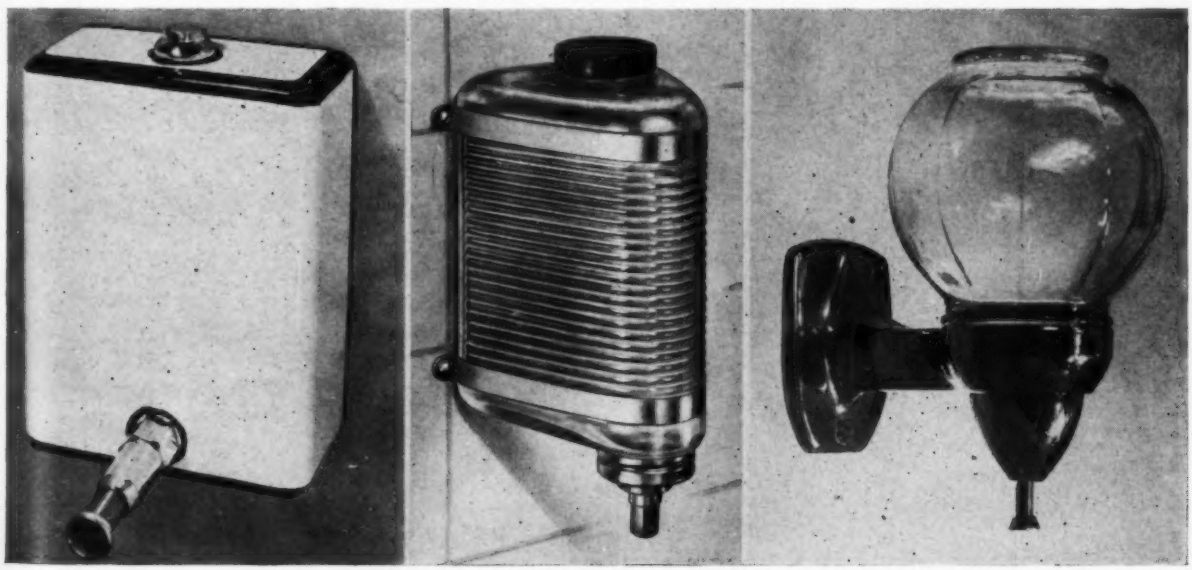
By Dr. E. G. Thomssen

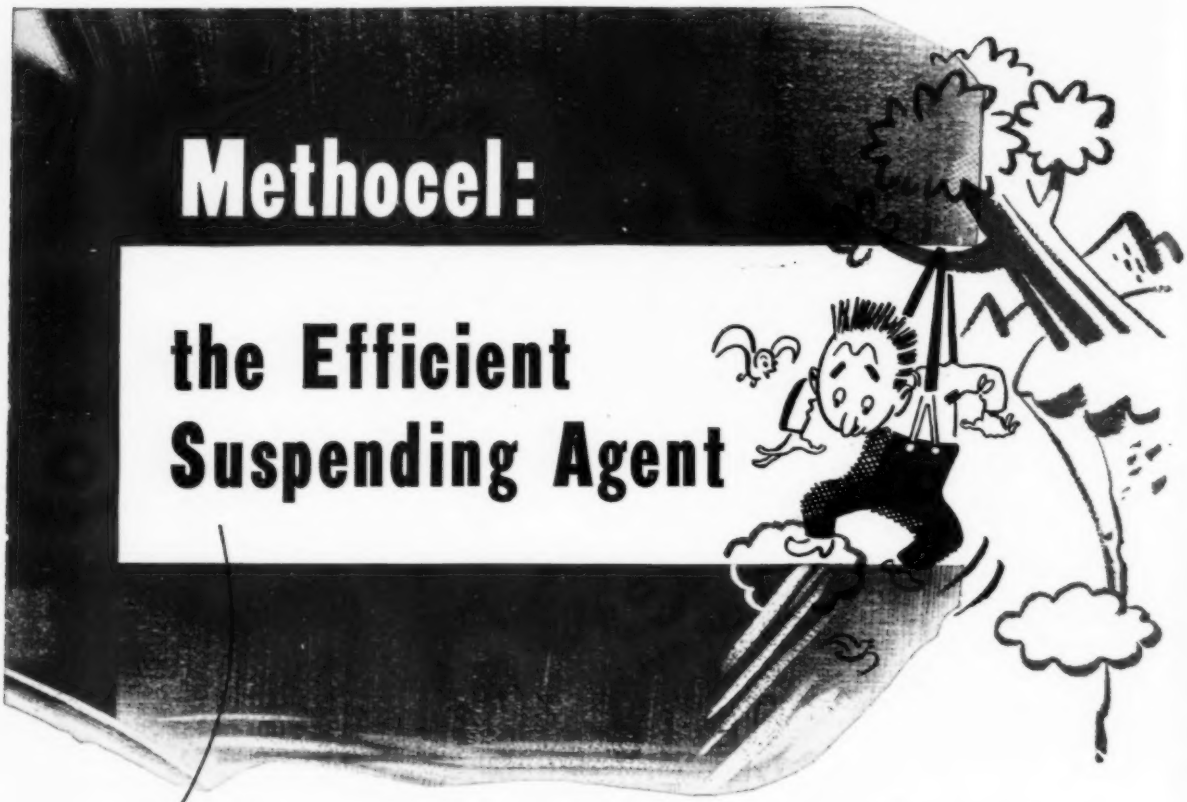
PART II

LIQUID soap dispensers may be divided into two classes: those that deliver soap in liquid form and those dispensing a foam. Both kinds use liquid soaps, the difference being that the lather type whips the liquid soap into a firm lather which is then meted out in desired quantities. It is claimed that lather dispensers save soap, which may run off the hands if used as a liquid. Liquid soaps are dispensed by gravity feed systems or from individual dispensers. In discussing liquid dispensers we will consider them under the heading of the manufacturers rather than by types.

U. S. Sanitary Specialties Corp., Chicago, has made numerous installations of their dispensers over many years. The public schools of Chicago and New York are completely equipped with one type of their product. This company makes both gravity and individual types. The valve of their Soaperior dispensers is an exclusive, important feature of this line. The hexagon shaped No. 103 delivers liquid soap, the No. 140 emits lather from the fluid soap. The mechanisms are interchangeable. Among the desirable characteristics of Soaperior valves are the delivery of a measured amount of soap with each operation of the push button, perfect timing of soap delivery so that no liquid is wasted through improper position of the valve

The lather type dispenser at left is Moore Brothers' "Tanc-Typ," which also comes in liquid model; American Dispenser Co.'s new "Likwidurn" No. 9 is in center, while the model at right with plastic bracket is Moore Brothers' No. 50 liquid dispenser.





Methocel:

the Efficient Suspending Agent

If you are looking for a better suspending agent, try the *new* Methocel. Here is a product that gives you reliable, efficient suspension in dispersions of many kinds.

In the production of liquid waxes, metal cleansers and polishes of all kinds, the suspending action of Methocel minimizes settling and caking of dispersed solids. Methocel's protective colloid action, plus its thickening properties aid in the suspension of even large particles.

Methocel has been recommended also as an additive to liquid soaps. Because of the well known thickening ability, as little as three or four per cent of high viscosity Methocel will thicken potassium soap solutions to the point where they will not pour. Moreover, Methocel improves sudsing and lathering properties.

Methocel may be just what you have been looking for to improve your product. Send in the coupon for your free experimental sample of the *new* Methocel, *powdered*.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

THE new *methocel*

DID YOU GET YOUR SAMPLE?

The Dow Chemical Company
Dept. Me-755
Midland, Michigan

Please send free sample of METHOCEL, for use in_____

Check viscosity desired: 15, 25, 100, 400, 1500, 4000 cps.

Name and Title_____

Firm_____

Address_____

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND AGRICULTURE

Pullman type dispenser above is Bobrick's 829 basin unit.

piston, ready removability for repair or replacement of the valve from a gravity dispensing system without interference or stopping of other valves, easy adujstment of the valve from the outside, without removal to take up piston wear and use of metal parts that do not rust, corrode nor oxidize. Leakage is prevented by a slotted packing nut arrangement a slight turn of which checks dripping. To remove the valve mechanism, this nut is removed and the valve may be pulled out as a unit. A unique cone check system prevents any leakage of the soap, so that other valves in the gravity system continue to operate. U. S. Sanitary's products comprise a complete line of individual and gravity dispensers for lavatories and showers, valves, soap tanks, as well as other accessories.

We have already referred to powdered soap dispensers made by Bobrick Manufacturing Co., Los Angeles. Bobrick's line of liquid soap mechanisms is considerably larger. The company was founded in 1906. The son of the founder, A. L. Bobrick, together with several young, well qualified men associated with him have constantly improved Bobrick products and increased their volume of business. The company has pioneered a long list of "firsts" from 1906 to 1949, including such innovations as the first wall type gravity feed valve in 1911, the Pullman type dispenser (1912), a method of attaching dispensers with wall pads without screws (1948) and the "Hydroflex" mechanism developed this year. Bobrick supplies the trade with a long list of enlightening literature, including architectural specifications. From among these we refer to some of their dispensers. Their latest patented liquid dispenser, Model No. 24, represents a complete break with the past. This product is constructed in such a manner as to prevent breakage and failure to deliver soap. The force pump mechanism of No. 24 is based upon the use of a flexible tube that does not require the use of washers or packing. The tube is termed "Hydroflex." It is activated by a push-in

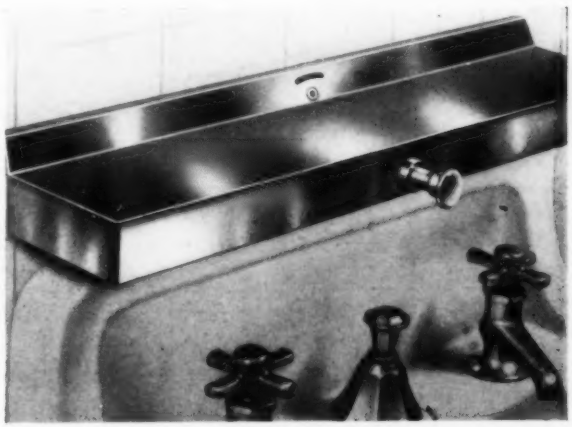
The all-metal lather type unit above is Bobrick's monel dispenser.

stroke that forces out a measured amount of soap. No priming is necessary and the tube may be cleaned easily without removing the dispenser from the wall. Other features include a locked filler cap, a stainless steel hood, a rugged 18 oz. capacity container, concealed fastenings and wall pad mountings which require no screws and little time for installation. Bobrick also make a dispenser which distributes any type of liquid hand lotion. A 16,000 square foot plant in Los Angeles enables the firm to manufacture rather than assemble all necessary parts for their line of dispensers and dispensing equipment.

Moore Brothers Co. of New York is very well known for its liquid soap dispensers and gravity systems.

Below: Frosted globe liquid dispenser made by U. S. Sanitary Specialties Corp.

Right: The "Lathurshelf" stainless steel dispenser of American Dispenser Co. provides a long flat surface at top that can be used as shelf. It features gauge indicating level of liquid and can be fitted with an extra valve.



Hoist your sales on soap and things

Good sales need Norda sales scents

Depend on Norda for the smell that will sell a product. Norda, *first to talk sales scents,* can help you make better products and quicker profits.

Trust your own tests, not our say-so. Try us out by getting a sample of Norda's superior hydroxy-citronellal. Is it delicate, true, long-lasting? Will it give that stable lily-of-the-valley background that blends subtly with and brings out the best in your soaps, perfumes . . . *all* your floral products?

You demand quality. Norda insists on it, too. Every aromatic, odor, and essence you will ever get from Norda is absolutely pure top quality. Our products must help *you* make more money. Call us now . . . your free samples are ready.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.

601 West 26th Street, New York 1, N. Y.

NORDA MAKES GOOD SCENTS®

CHICAGO • LOS ANGELES • ST. PAUL • MONTREAL • TORONTO • HAVANA • MEXICO CITY • LONDON • PARIS

The concern features dependability of operation as a prime consideration and guarantees all its equipment against mechanical defects for one year. Moore Brothers state that in their experience the cheaper dispensers, which naturally enjoy the greatest popularity, often are the best ones to buy because of their simplicity of function, low maintenance cost and small initial price. From among its line of equipment their Nos. 50, 100 and 105 are the most popular because of good appearance, low cost and simple operation. Moore "Peer" dispensers are available with brackets of plastic, a chrome plated metal or chrome plated brass slab. All parts are made of brass and a vacuum controlled spring action valve releases a measured amount of liquid soap without any leakage or clogging. The heavy "Duraglas" bowl has a 12 oz. capacity. "Peer" dispensers are easily installed; repair parts are readily replaceable and reasonably priced. An upward thrust of the release button forces out the soap by displacing air inside the globe. It is not possible to produce any "bleeding" by removing an upper filling cap, as can be done in the so-called "draft" machines. Moore Brothers also make more expensive dispensers. Their line of individual dispensers includes the well known tilting type for liquid soaps. For gravity soap systems either liquid or lather valves of special design are used by Moore Brothers. These valves operate satisfactorily at the rate of about 200 times per ounce of soap.

Watrous Liquid and Lather Dispensers are offered by Imperial Brass Co., Chicago. These comprise a full line of individual dispensers and gravity systems. The lather dispenser measures out a quantity of soap in the form of a rich creamy lather, which is said not to slip through the fingers and run off the hands. As a result, soap savings of as much as 65 per cent are said to result. Individual Watrous dispensers may be mounted on the wall or in the lavatory. Soap is dispensed by pushing in or down on a button. Both glass and chromium containers are used for holding the liquid soap. For the gravity systems, lather type or liquid type valves are available to deliver the soap from vitreous enamel, white enamel, glass or sprayed aluminum tanks.

Fuld Brothers, Inc. of Baltimore, have consolidated the number of dispensers in their line. Their "Topper" is said to be very popular because of its dependability and appearance. Moderately priced, it is said to render excellent service. Among its advantages are easy filling through a screw cap closure, one hand dispensing, easy cleaning, trouble-free valves, self-tightening "Neoprene" gaskets and rigid lock screw installations.

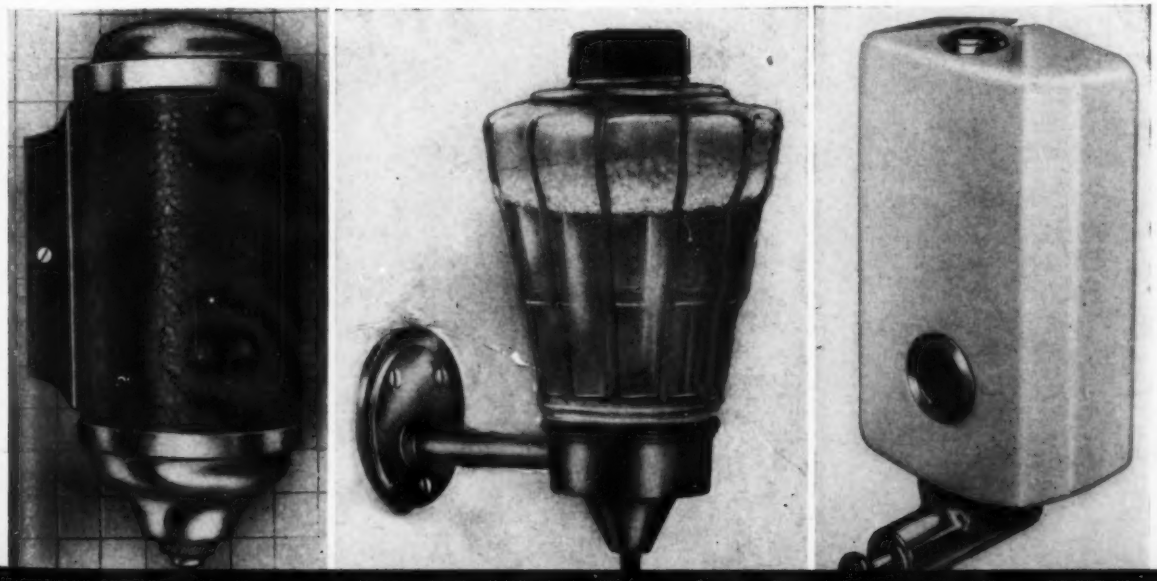
Four moderately priced liquid soap dispensers are manufactured by Palmer Fixture Company, Waukesha, Wis. The lower priced ones are the "Century" and "PC-1." The former sells in large volume. It is equipped with a push-up type valve. The soap is stored in a readily replaceable glass bowl. All parts are constructed from materials that resist corrosion or rusting. Its design is simple and attractive. The "PC-1," lower in price than the "Century," is probably the only porcelain unit on the market. It closely simulates the "Century" except for the bracket. This dispenser has permanent finish and is very sanitary. Palmers' "Super Server" is designed for the medium price field and is recommended for all better type installations. The "Pres Powder," a powder soap dispenser, completes the Palmer line.

We have already mentioned American Dispenser Company's "Powdurn." To cary out the "urn" line, the company offers a "Lik-wid-urn" unit. It is easily installed by attaching a brass plate to the wall first so that toggle bolts or screw heads are not exposed when the installation is complete. The piston, springs and other internal parts are made of stainless steel so as to prevent any formation of verdigris from use of copper alloys. The push-in valve is located above the level of the liquid, thereby reducing the possibility of leakage. It is necessary to pump the soap up from the reservoir, thus eliminating any drip or flow of soap and economizing on its use. This dispenser will also handle any liquid lotion, sulfonated oil or liquid detergent.

Other interesting dispensers offered by American Dispenser Company include its new inexpensive quart dispenser and the "Lathurshelf," a heavy duty item. The former is installed flat against the wall and is strong and durable. It is easily filled through a top screw cap, metes out an ample supply of soap without delivering a steady

(*Turn to Page* 133)

Left to right, below, are Ace Dispenser Co.'s liquid dispenser; next, "Moderna" push-up type liquid dispenser made by Ampion Corp.; U.S. Sanitary Specialities' liquid dispenser with "port hole" to see level of soap.



How many sales in a square yard?

It all depends on how well your package is designed to use the space—be it floor, shelf, or counter.

Remember, cans are compact. They stack easily into eye-catching displays. They encourage impulse buying.

It's evident, therefore, that one of the most profitable ways of putting a square yard of store space to work for the retailer (*and for you*) is to pack your product in metal containers.

CANCO

This trademark is your assurance of quality containers. Look for it!

AMERICAN CAN COMPANY

New York • Chicago • San Francisco

FIVE OTHER WAYS CANS WORK FOR SALES AND PROFITS

1. **Cans are break-proof.**
2. **Cans protect contents against light, air, insects, and moisture.**
3. **Cans are *light*—mean lower shipping costs.**
4. **Cans are tamper-proof.**
5. **Cans are easy to open and dispose of.**

New Silica for Floor Wax

A colloidal silica which increases the skid resistance of aqueous waxes without softening

By Michael Sveda*
E. L. du Pont de Nemours & Co., Inc.
Grasselli Chemicals Department
Wilmington, Delaware

THE use of "Ludox" colloidal silica in aqueous waxes constitutes a new approach for imparting the very important property of skid resistance. This new inorganic product makes it possible to achieve excellent increases in skid resistance without the usual attendant softening of the film. Methods for obtaining optimum skid resistance in waxes are presented as well as information on the formulation of freeze-resistant compositions.

During the development of "Ludox," the powerful new tool of light-scattering was used extensively. An outline of this technique is presented here in the hope that its application to waxes will aid in the formulation of even better products by the wax industry. A description is also given of a new technique for studying the surface of wax films, which involves electronmicroscopic examination of replicas of a wax surface.

"Ludox" Chemistry, Structure

"LUDOX" colloidal silica, an aqueous solution containing 30 per cent SiO_2 in an extremely finely divided form, is made by an ion exchange technique. Sodium silicate is passed through the ion exchange material, and the effluent is adjusted to 30 per cent SiO_2. Some sodium is retained in the final product. Thus, in the commercial sodium silicate used as a starting material, the SiO_2:Na_2O ratio is 3.3:1. The final "Ludox" colloidal silica contains an SiO_2:Na_2O ratio of 75-90:1.

The process for producing the colloidal silica particles involves, in simplified form, the condensation of silicic acid molecules to form highly cross-linked, spherical micelles. That the ultimate particles are spherical in nature is easily seen from the electronmicrographs shown in Figure 1 and Figure 2. In Figure 1, a highly-diluted solution of "Ludox" colloidal silica was dried down directly on a nitrocellulose screen by depositing a tiny droplet from a very thin glass capillary. At 25,000 magnification, the ultimate particles are still so small that the definition on the plate is only fair. By using a shadow-casting technique, involving the evaporation of metallic gold onto the "Ludox" particles at an angle of about

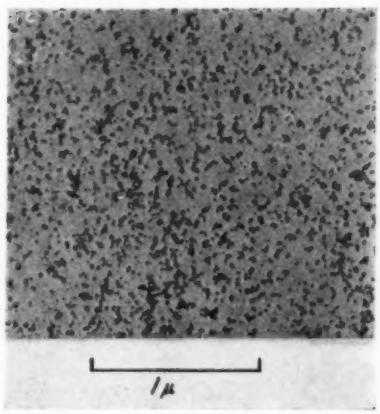


Fig. 1, "Ludox" colloidal silica—25,000x.

15°, better definition can be obtained, as shown in Figure 2. It is estimated that the range of particle size in "Ludox" colloidal silica is 10 to 30 millimicrons, with an average of 15 millimicrons.

A simplified formulation of the "Ludox" reaction is given in Figure 3. Each silicon in the ortho-silicic acid is represented by a tetrahedron, with four hydroxyl groups surrounding each silicon atom. Condensation is obtained by dehydration between the individual silicic acid molecules. The average colloidal silica micelle obtained finally contains about 33,000 silica nuclei.

During the process, an occasional hydroxyl group fails to be dehydrated. The surface hydroxyls are thought to contribute directly to the extraordinary stability of this colloid, which is at least several years at room temperature. The silica micelle is charged negatively and is surrounded by positively-charged sodium ions in the immediate vicinity.

The extraordinarily low viscosity, only about 2 to 3 centipoises, for a solution containing 30 per cent of the polymeric silica, also results from the spherical nature of the micelles. The high degree of clarity of the concentrated solution, so important for its application in waxes, stems from the extremely fine particle size.

Molecular Weights and Particle Size by Light-Scattering

THE experimental work on "Ludox" colloidal silica utilized light-scattering as a tool for studying molecular weights and particle sizes. To our knowledge, this is the first industrial development which used light-scattering so extensively. Since wax dispersions and "Ludox" colloidal silica are both aqueous colloids having much in common, the same technique should be useful for studying formulation

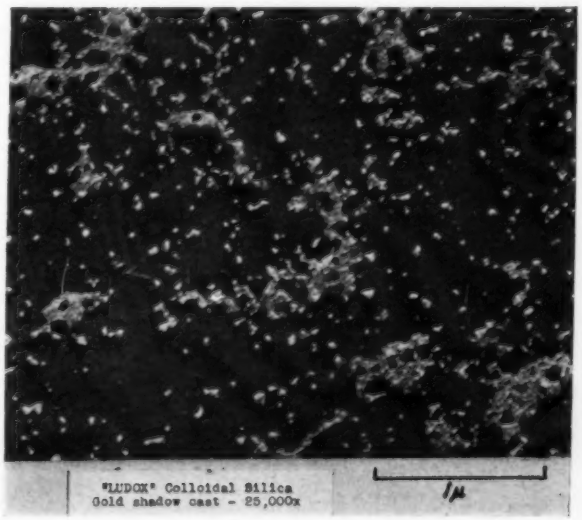


Fig. 2

* Before 35th mid-year meeting NAIDM, Chicago, June 13.

ASSURED UNIFORMITY and QUALITY

Franklin's complete line of maintenance materials are available under your private label

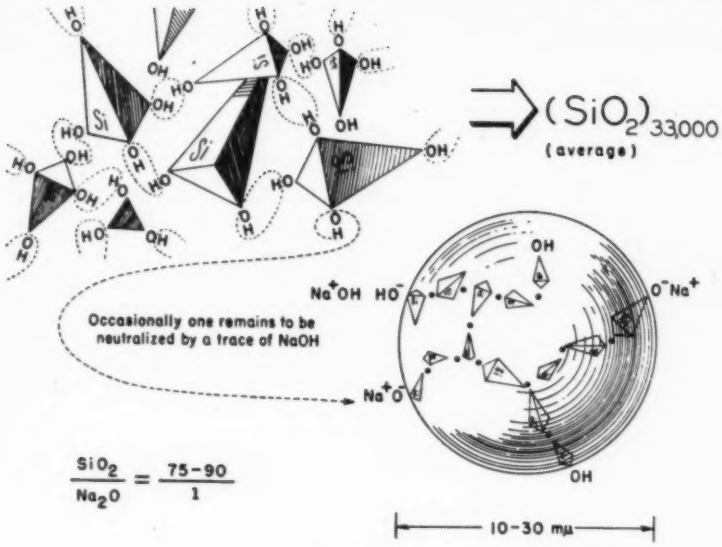


Figure 3

variables in wax manufacture. The particle size of waxes seems to affect both gloss and stability, and tentative indications are presented in this paper that particle size also affects skid resistance.

The "molecular weight" used in light-scattering techniques is actually a "micellar weight" of the over-all colloidal particles—the weight of the number of particles equivalent to Avogadro's number, 6.02×10^{23}. Individual, ordinary molecules of either the silica or the carnauba wax making up a micelle lose their identity, just as in counting the number of houses in a city, the individual bricks lose their identity. The importance of the "molecular weight" or "micellar weight" determined by light-scattering is that from this value, knowing the density and the shape of the molecule, particle size can be calculated accurately.

Difficulties With Electronmicrographs

THE question may well be asked as to why particle size cannot be determined sufficiently accurately by means of electronmicrographs. One difficulty is that electronmicroscope technique requires a very high vacuum, so that photographs can be obtained only on thoroughly dried material. The drying process may cause shrinkage of the individual micelles, and the properties of colloids in their native environment of a solvent medium are of utmost importance.

Another difficulty is that diameters cannot be measured accurately from such photographs. At 25,000 magnification, for example, a one-inch length represents 1 micron, which in turn contains 1,000 millimicrons. Furthermore, because of the geometry of spheres, molecular weights increase as the cube of the diameter of the micelle. The difficulties are illustrated in adjacent table.

It can readily be seen that an error in measurement of only 0.001" on the original plate, corresponding to an increase of from 15 up to 16 millimicrons, results in a 20 per cent error in the ultimate molecular weight. Since molecular weights in this range can be obtained to an accuracy of about 1 per cent, a molecular weight is much more sensitive for determining particle size than is measurement of electronmicrographs with a scale.

The Principle of Light-Scattering

THE over-all principle of light-scattering depends simply on measurements taken on the familiar Tyndall cone formed when light passes through a colloidal dispersion. From the amount of light seen at right angles to the main beam, and from refractive index properties of the colloids, the molecular weight is readily calculated.

Number-Average vs. Weight-Average Molecular Weight

IT IS important to define the difference between number-average and weight-average molecular weight, since only the latter is used in light-scattering. If the property being measured depends only on the total number of molecules present, as in freezing-point depressions and boiling-point elevations, number-average molecular weights are used. A rigorous definition of number-average molecular weights is:

$$M_n = \frac{\Sigma n_i M_i}{\Sigma n_i},$$

where n_i is the total number of molecules in each species, and M_i is the molecular weight of that particular species.

Where large particles have proportionately more effect than smaller ones, as in light-scattering, weight-average molecular weights are employed, and these are defined as follows:

$$M_w = \frac{\Sigma (n_i M_i) M_i}{\Sigma n_i M_i}.$$

Significant errors can be introduced by using weight-average and number-average molecular weights interchangeably. If 95 molecules having a molecular weight of 2,000,000 are mixed with only 5 molecules having a molecular weight of 16,000,000, the weight-average value is 6,150,000, and the number-average molecular weight is 2,700,000, a ratio of 2.28:1. Weight-average molecular weights are the type obtained by light-scattering.

Factors in Light-Scattering

THE various factors involved in light-scattering measurements will now be outlined briefly. No attempt will be made to derive the equations, since that is beyond the scope of this paper.[1,2,3] (The derivations have been published by Professor Debye, who has done much of the poineering work in this field.) Neither will any attempt be made to discuss all the possible aspects involved, such as relation of particle size to wave length, and the attendant corrections for relatively large particles. The chief objective of this section is to separate the individual terms of the light-scattering equations, and explain them in sufficient detail to present an understandable picture of the nature of the measurement.

Light has electromagnetic properties, and when it strikes the electrons in a particle, the light is scattered. The larger the particle, the greater the scattering. Generally, the scattered light is measured at 90° to the incident beam. For very large particles, and for differentiating the particle distribution or defining the particle shape, measurements are also made in some instances at 45° and 135° to the incident beam.

Since refractive index is involved whenever light passes from a medium of one density to a medium having a different density, this property of the colloidal solution being studied is of utmost importance in light-scattering. The refractive index depends first on the wave length of the light used, since shorter waves are bent more than longer ones.

Two other phenomena are involved chiefly in refractive indices of colloidal solutions. The simplest one occurs when the light passes from the solvent surrounding the particle, into the particle, and back out again.[4] Since, for example, in the case of "Ludox" colloidal silica, the density of the water is about 1, and the density of the colloidal silica micelle is about 2, light is slowed down and bent "micro-

Diameter			*Molecular Weight*	
10 millimicrons			594,000	
15	"	error of $\frac{1"}{1000}$ on plate	2,000,000	error of 20%
16	"		2,430,000	
20	"		4,730,000	
30	"		16,000,000	

Consult us

for

ESSENTIAL OILS

FROM MOROCCO

CEDAR FROM ATLAS

ORIGANUM

PENNYROYAL

Roure-Dupont, Inc.

ESSENTIAL OILS, AROMATIC CHEMICALS AND PERFUME BASES

GENERAL OFFICES

366 MADISON AVENUE, NEW YORK 17, N. Y.

CHICAGO BRANCH
510 NORTH DEARBORN ST.

LOS ANGELES BRANCH
5517 SUNSET BOULEVARD, HOLLYWOOD

SOLE AGENTS IN UNITED STATES AND CANADA FOR

ROURE-BERTRAND FILS et JUSTIN DUPONT

GRASSE (A. M.) FRANCE

ARGENTEUIL (S & O) FRANCE

scopically." Somewhat more macroscopic changes in density, and therefore in refractive index, are also involved. The Brownian movement of the colloid, which exhibits the bombardment of the colloidal particles by means of the solvent molecules, causes local changes in concentration of the colloid in the solvent, as shown in Figure 4. During a given moment of time, three colloid particles may be present in a local unit of volume, and during the next moment, several times that many particles may be present in that same volume. A continual fluctuation in the local density occurs, resulting in continual changes in refractive index. This latter effect is the principle cause of the familiar Tyndall cone.

In the light-scattering equations, the following factors are involved in determining weight-average molecular weight, M_w:

N_o = number of particles in molecular weight (6.02×10^{23})

λ = wave length of the light used

n = refractive index of the solvent against air

$\frac{dn}{dc}$ = rate of change of refractive index of the solution with change in concentration of the solute

τ = absolute turbidity

C = concentration of the solute

$2\frac{B}{RT}$ = an osmotic pressure term, including deviation from an ideal solution (takes care of Brownian movement effect).

The equations relating these terms are:

Equation (1)

$$H\left(\frac{C}{\tau}\right) = \frac{1}{M_w} + 2\frac{B}{RT}(C)$$

Equation (2)

$$H = \frac{32\pi^3}{3}\,\frac{n^2}{\lambda^4}\,\frac{\left(\frac{dn}{dc}\right)^2}{N_o}$$

It can readily be seen that H (Equation 2) contains only refractive index terms, the wave length of light, and Avogadro's number, all of which can readily be measured or are known. Fortunately, dn/dc for a given colloid becomes constant if the solvent remains constant. This is true in the colloidal silica dispersions under discussion. However, where wax dispersions are involved, dn/dc may be constant only for a particular formulation and only over a rather small change in ratio of ingredients. This will probably be true because at least some of the dispersing agent will be dissolved in the solvent, instead of being attached to the wax micelle. If the concentration of emulsifying agent changes, and almost certainly if the type of dispersing agent is changed, dn/dc will probably have to be redetermined fairly often.

The term τ depends on the type of instrument used, since it relates such terms as (1) filter factors, which depend on the type of filters used to obtain a uniform beam of light, (2) the size of the aperture, and (3) the standards and constants used in calibrating the instrument. The ratio of the intensity of the incident beam to the amount of light obtained at right angles is also involved. With a photoelectric light-scattering device, the ratio is obtained by galvanometer readings. With a visual type of instrument, this ratio relates the two readings for a visual split field.

Fortunately, the term 2 B/RT need not be measured independently. This term can be determined in some instances by osmotic pressure measurements, but where the particles are large, changes in osmotic pressure are small and are difficult to determine. A graphical method is generally used in light-scattering to obviate the need for measuring the osmotic pressure term directly.

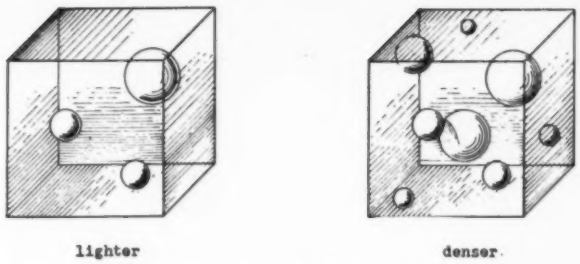


Fig. 4, local changes in concentrations of colloid caused by Brownian movement.

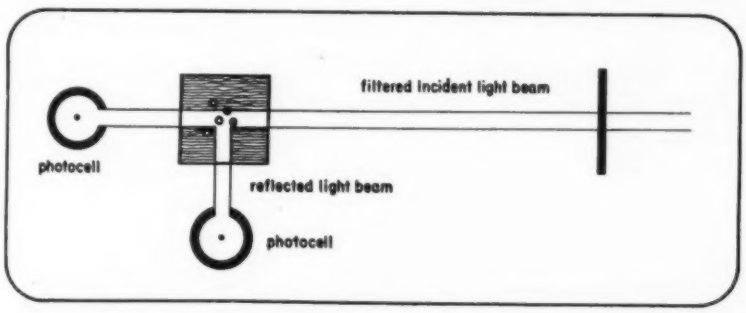
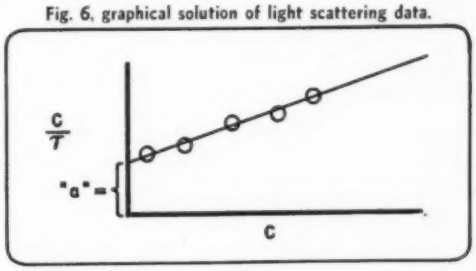


Fig. 5, diagram of light scattering.

Mechanics of Light-Scattering

DILUTE solutions of the colloid, generally containing 1 per cent solids and less, are made up. The refractive index of the solutions is determined against that of the pure solvent in order to obtain dn/dc. A special turbidimeter is used to obtain the turbidity at right angles to the incident beam. Diagrammatically, the latter operation is shown in Figure 5. If the filtered beam of incident light would pass through the cell containing only the solvent, essentially all of the light would be registered by the photo cell as passing through the solution. However, if particles having a density different from that of the solvent are present, the light scattered at right angles can be determined in the photo cell, which is swung back and forth to obtain both measurements. These two beams are then compared to obtain the *absolute* turbidity.

Fig. 6, graphical solution of light scattering data.



Calculating the Data

A GRAPH is made of C/τ versus C, as shown in Figure 6, and a straight line is passed through the points, either visually, or by means of the method of least squares. Since the objective is to obtain the amount of scattering due to a single average particle, the concentration is set equal to zero, representing the effect at infinite dilution. The intercept "a" at zero concentration corresponds, then, to the amount of scattering obtained at infinite dilution. In Equation (1) when the concentration is set equal to zero, the right-hand term drops out, and the equation is simplified to read:

$$H \times \frac{C}{\tau} = \frac{1}{M_w}$$

Since C/τ is now the effect at zero concentration, the intercept "a' is simply substituted in the equation, so that

$$M_w = \frac{1}{H \times a}$$

where H is defined as in Equation (2).

(To Be Concluded)

MANUFACTURING EXCLUSIVELY FOR THE JOBBER

DISINFECTANTS AND DEODORANTS

Odorless Disinfectants
Coal Tar Disinfectants
Pine Oil Disinfectants
Urinal Cakes
Deodorant Blocks
Perfume Sprays
Pine Deodorant

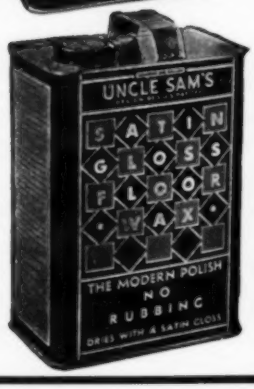
INSECTICIDES

Fly Sprays
Moth Sprays
Chloride Sprays
D D T Sprays

LIQUID SOAPS

Hand-Floor
Shampoo

WRITE FOR OUR DESCRIPTIVE CATALOG and PRICE LIST



POLISHES

Metal
Furniture
Bar Oil
Cedar Oil
Silver Paste
Lemon Oil

WAXES

Non-Rubbing
Prepared Liquid
Prepared Paste
Powdered Dance Wax

UNCLE SAM CHEMICAL CO., Inc.
575 WEST 131st ST. Est. 1920 NEW YORK 27, N. Y.

PWK 49-1

Crown Quality Petrolite **700**

OF SPECIAL INTEREST TO THE MANUFACTURERS OF PAPER AND PAPER PRODUCTS

A LOW PENETRATION, HIGH MELTING POINT MICROCRYSTALLINE WAX

Petrolite Crown Quality 700 is an unsaponifiable mineral wax, characterized by high melting point (190/195°F), low penetration (5 Maximum with 100 grams), light yellow color (2 to 2½ N.P.A.) and complete absence of taste or odor. It is highly useful as an additive to paraffin or amorphous type waxes when added hardness and higher melting points are desirable.

Complete information and samples on request.

PETROLITE *Crown Quality* WAX
PETROLITE CORPORATION, LTD • WAX DIVISION
30 BROAD STREET, NEW YORK 4, NEW YORK REFINERY: BOX 390, KILGORE, TEXAS

Petrolite

QUANTITY SHIPMENTS IMMEDIATELY AVAILABLE

TECHNICAL BRIEFS

From Current Literature in the Sanitary Products Field

Assaying Rotenone

Good agreement was attained between the standard housefly test and a test using guppies for the standardization of rotenone. The rotenone was extracted with acetone, and a small amount of the extract was added to the water containing the fish. The rotenone content was measured by the length of time required to kill the fish and also by the minimum dosage required to kill the fish within six hours. The latter procedure was preferable because constant and long observation was not required when the rotenone concentration was low.

Spectrophotometric measurement of the absorption of rotenone, deguelin, elliptone, and toxicarol in acetone showed that the first three compounds exhibited maximum absorption at 360 millimicrons. The maximum absorption of toxicarol was at 400 millimicrons. When the transmittance of eight derris samples was plotted against toxicity, expressed as rotenone and determined with houseflies, a correlation with the biological test for toxicity was obtained. Lonchocarpus samples did not give good agreement. C. Pagan et al, Federal Expt. Sta. Puerto Rico, U. S. Dept. Agr. Rept. *1947*, 7-9, 10-11.

Insecticide and Fungicide

The compound bis (2-hydroxy-3 - nitro - 5 - chlorophenyl) sulfide, showed both fungicidal and insecticidal properties. It can be used at a concentration of two per cent in clay dust. W. F. Hester, D. Hill, and W. E. Craig, to Rohm & Haas Co. U. S. Patent No. 2,450,342.

Flies Resistant to DDT

Flies resistant to the action of DDT were destroyed by "Octa-Klor" (chlordane) applied to the walls in kerosene solution. Two grams per square meter were effective for more than a month, and 2.5 grams for about six months. "Gammaesan" was much less effective, had an unpleasant odor, and caused nausea and headaches. The odor of "Octa-Klor" was slightly offensive but it did not seem to be toxic for man. S. Bettini and B. Barachini, *Rend. ist. super. sanita 11*, 841-8; through *Chem. Abs.*

Toxicity Studies

Although the toxicity of compounds often bears no relation to their chemical constitution, often it can be correlated with their physical properties. Acting on this assumption, the authors have used physico-chemical methods, such as ultra-violet and infrared spectroscopy, to study the mechanisms of action of certain biologically active substances, notably fungicides, isolated from cultures of soil fungi. This tends to show that physical chemistry is likely to become as important as organic chemistry in such studies.

Distinctions between toxicities of the chemical and physical type are shown most clearly by compounds in homologous series. With physically toxic substances, the equi-toxic molar concentration of any one member of the series is between two and three times that of the next high homologue. In some homologous series, as exemplified by the toxicity of straight-chain aliphatic carboxylic acids towards *Aphis rumicis*, the lower members are chemically toxic, but as the molecular weight increases, physical toxicity comes more and more into evidence until it swamps the chemical effect. When compounds of a homologous series are more toxic to one organism than to another, a saturated solution of one of the higher members of the series may be quite inactive towards the more resistant organism, while highly active towards the more sensitive one. Thus, very low concentrations of lauric acid and of tridecanoic acid will kill *Staphylococcus aureus*, while saturated solutions of these acids are not toxic towards *Aspergillus niger*.

Thiocyanoacetates derived from various saturated alcohols with *less* than 10 carbon atoms, are irritant to the human mucous membranes. With ten carbon atoms in the alcohol portion, however, the compounds are non-irritant to humans but highly toxic to houseflies. Higher members of the series are also non-irritant. The cut-off point is apparently reached for the human before that for the housefly. J. C. McGowan and J. F. Grove, *Manufacturing Chemist 20*, 219-21 (1949).

Synergists

Benzene sulfonic acid amides obtained from reduced nitrogen bases from petroleum act as synergists for pyrethrum and rotenone. A. H. Lewis, to California Research Corp. U. S. Patent No. 2,438,370.

Fungicidal Fabric

Potent fungicidal and bactericidal products, particularly useful as cloth impregnants, are made as metallo-organic compounds. By dissolving 134 grams of phenyl mercuric acetate in two liters of boiling water, adding 80 grams of copper acetate, heating for 10 minutes, and letting stand overnight, a bluish green precipitate is obtained. This is washed with water, carbitol, and alcohol. The product is particularly well bound by cloth, is comparatively nontoxic and nonirritating, and is highly fungistatic. C. N. Anderson, to Gallowhur Corp. U. S. Patent No. 2,451,052.

Hexyl Resorcinol

Hexyl resorcinol in a concentration of 1:100,000 in Sabouraud medium was fungistatic for *Trichophyton, Sporotrichum, Microsporum, Achorion, Epidermophyton, Paracoccidioides*, and *Actinomyces*, and in a concentration of 1:10,000 for *Aspergillus, Penicillium, Candida*, and *Rhisopus*. Higher concentrations were fungicidal. Addition of a small amount of lecithin decreased the activity, but not of serum proteins. A. T. Leao and F. W. Eichboum, *Rev. brasil. biol. 8*, 281-5; through *Chem. Abs.*

RING the BELL with MOORE Soap Dispensers

Provide a trouble-free soap dispenser and you not only keep your customer happy with his dispenser purchase, but you also get his repeat soap orders. A dispenser that breaks down causes you trouble on repairs, gets your customer in an "eating nails" mood, and uses very little soap. Moore dispensers are dependable — every dispenser we make is guaranteed.

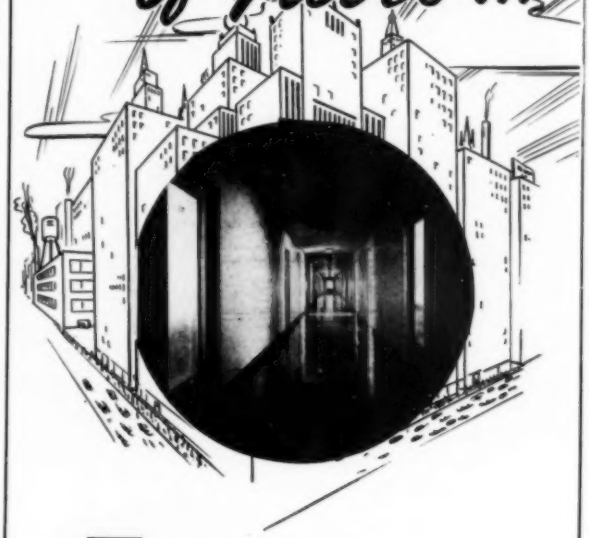
Here's Why No. 400 is A Best Buy

1. Smart, stream-lined appearance makes it ideal for use in the finest washrooms.
2. Special Moore-patented push-in valve prevents leaking, will not stick or corrode.
3. Heavy glass reservoir—with plastic screw cap—holds 12 ounces of liquid soap.
4. A low price, lower than any comparable dispenser on the market.

Send for memo sample and information about our complete line.

MOORE BROS. COMPANY
100 WARREN ST.,
NEW YORK 7, N.Y.

10,000 Miles of Floors...



FEDERAL
SLO TRED
Self-Polishing
INDUSTRIAL WAX

Thousands of miles of Asphalt Tile floors, Rubber Tile floors, Linoleum and Wood floors—a tremendous market for Federal's low cost, Slo Tred Self-Polishing Wax.

It's durable—It's long wearing—It's economical. Easily applied without streaking. Dries quickly to a high gloss.

It will pay you to investigate the high profit possibilities that are yours when you carry Slo Tred Industrial Self-Polishing Wax.

Tested and Approved by Underwriters Laboratories, Inc. as an Anti-Slip Material

FEDERAL
VARNISH
DIV.
Chicago 8, Ill.

Write for Information — FREE Testing Samples and Special Offer. Federal Varnish Div., Dept. 749, Ashland Ave. at 29th St.

Fungicidal Paints

Fungicidal paints, lacquers, and varnishes have been made possible by solubilization of copper 8-quinolinolate, a nontoxic, nonleachable, nonvolatile fungicide. From 15 to 20 per cent of the copper compound based on paint solids, is usually used. In all the tests, control untreated coatings were overgrown with fungi, while treated samples showed no fungus growth at all. The new solubilized copper compound has a carrier of 50 per cent naphthenic acid and 50 per cent xylene, and can be used as a coating additive without otherwise changing approved formulations. O. Eisenschiml and V. N. Kalberg, *Paint, Oil, Chem. Rev. 111*, No. 24, 17-19, 29-30.

Chlorinated Wax Amines

Chlorinated paraffin wax amines are effective fungicides and bactericides. They may be used to impregnate textiles and for a number of other purposes where such materials are needed. T. E. Reamer, to Shell Development Co. U. S. Patent No. 2,448,901.

SALT

(*From Page 37*)

recovery from sea water on the Massachusetts coast. Dirck De Wolff began at Coney Island not long after. While the salt springs of Onondaga, N. Y. were known for many years, it was not until 1790 that the trade was established by Nathaniel Loomis. This was the first of the "inland" sources. Others followed and The Federal Co. became the largest domestic works. The towns of Salinas and Syracuse were founded and grew rapidly as a result. In order to expand the market along the coast in competition with imports, this new enterprise was the prime cause of the building of the Erie Canal which furnished the necessary inexpensive transportation. The tolls and tax on the salt thus carried paid half the cost of the canal construction.

Two other inland sources attained major importance. The industry grew up near South Charleston, W. Va. at the site of an old salt lick where Indians obtained their supply for generations. Operated at first as a shallow well enterprise, the first deep well was driven in 1807 by the Ruffins. Shortly after 1755, recovery began at Saltville, Va. Mary Ingles learned the art from the Indians and taught it to the settlers. By the mid-Nineteenth Century the combined production of the three inland sources was about 250,000 tons. Sales were for home consumption and for preserving fish, meat and leather. Expansion was largely a function of population increase.

The fortunes of salt and the rise of the chemical industry soon became inseparable. In 1884, The Solvay Process Co. began the production of soda ash by the ammonia process. The location of the plant was Syracuse. Mathieson Alkali Co. followed at Saltville. Then, in 1895, the first inexpensive electric power became available at Niagara Falls. Excellent salt deposits were present in western New York. Mathieson became the pioneer in the electrolysis of salt to produce chlorine with the co-products, caustic soda and hydrogen. Others followed including Hooker Electrochemical Co. and the Niagara Alkali Co. Within 15 years there were 11 electrolytic plants operating from Michigan to Maine. During the first World War, the Warner-Klipstein Chemical Co., later Westvaco Chlorine Products Co., began at South Charleston and within 20 years became the largest supplier of chlorine in the world.

The industry has had many fortunes and misfortunes. It has pretty well covered the country. The tendency for many years has been toward fewer and larger plants. There were 268 operations located east of the Mississippi 70 years ago. The number was reduced to 161 within 20 years. Today, the 74 plants are located in 12 states. Michigan makes 28 per cent of the supply, followed by Ohio and New York with 16 per cent each, and Louisiana with 12 per cent.

CARNAUBA WAX

(*From Page 113*)

good correlation between laboratory tests and customer reaction. The figures in Table No. 4 show some correlation between shelf life and flash point tests. The same formula was used in each case. The normal expectancy of this formula at 120° F. is one year or more.

TABLE 4

Flash Point of Wax	*Shelf Life at 120° F.*
536°F.	2 Days
545°F.	6 Days
509°F.	14 Days
572°F.	185 Days
590°F.	12 Months

Unfortunately, we did not realize that we would be called upon to give this paper and no further tests of tack or shelf life of waxes flashing below 572°F. were made. Upon these results we immediately stopped purchasing Carnauba wax with a flash point below 572°F. We have had no further difficulty with tackiness or low shelf life. This we believe is due to this policy. We do not believe that there is always a correlation between both tack and shelf life with low flash points. This would depend on the ingredients causing the low flash point. These ingredients may vary slightly.

From time to time we have had an academic interest in testing the flash points of various mixtures made with carnauba wax as one of the ingredients. Table No. 5 shows these flash points.

It would seem from these results that some of the inexpensive possible additives could be easily detected. Oxidized petroleum waxes are less sensitive but do lower the flash points. They have heavy petroleum odors and

TABLE 5

Refined Carnauba #3 N. C.		590°F.
Refined Carnauba #3 N. C.	5% Candelilla	575°F.
	100% Candelilla	490°F.
Refined Carnauba #3 N. C.	5% 135° Paraffin	527°F.
Refined Carnauba #3 N. C.	10% 180° Paraffin	570°F.
Refined Carnauba #3 N. C.	10% Oxidized Pet. Wax	582°F.
Refined Carnauba #3 N. C.	20% Oxidized Pet. Wax	572°F.
	100% Oxidized Pet. Wax	539°F.
Refined Carnauba #3 N. C.	10% Piccolyte S-100	543°F.
Refined Carnauba #3 N. C.	25% Piccolyte S-100	503°F.
Refined Carnauba #3 N. C.	25% Durez 219	540°F.
Refined Carnauba #3 N. C.	10% Wood I Rosin	510°F.

It's No Gamble!

WHEN YOU SPECIFY

'TRIO'

FLOOR WAXES
LIQUID SOAPS
DISINFECTANTS
INSECTICIDES
POLISHES
DEODORANTS
CLEANERS

DISTRIBUTORS • JOBBERS • WHOLESALERS

Increase Your Business and Protect Your Profits.

Trio Sanitary Products give top performance, are economical in operation, and are made under high standards of quality. Each item is laboratory controlled . . . from the raw material to the finished product. THERE IS NO GUESS WORK.

TRIO DOES NOT GAMBLE WITH YOUR BUSINESS

Technical knowledge PLUS is the solution to your maintenance problems.

SPECIAL FORMULAS • BULK QUANTITIES
PRIVATE LABEL WORK • STANDARD PACKAGES

Descriptive Literature and Price Quotations Furnished on Request.

TRIO *Chemical Works, Inc.*

341 SCHOLES STREET • BROOKLYN 6, N. Y.

Namico

PRODUCT OF THE MONTH

For a Better Dispenser Soap, We Recommend

"BORAX BASE" HAND SOAP

- **White—free flowing—free sudsing**
- **Mild—non-abrasive—efficient**
- **100% soluble**
- **Contains lanolin—and pleasantly scented**
- **Ideal for both shop and office use**

Write for a generous free sample today — and a copy of our new catalog.

National Milling & Chemical Company

Industrial Soap Products Since 1896

4603 NIXON STREET • PHILADELPHIA 27, PA.

are rather obvious when the flash point tests are made.

The composition of carnauba wax could be altered during the refining process. Carnauba wax is ordinarily refined in this country by a bleaching clay and filtration process similar to that used in refining fats and oils. We believe this method is giving way to other techniques because the losses of wax are high.

We have recently received wax which could not be used in one of our formulations because it absorbed 2-3 times the amount of ammonia ordinarily used. This was confirmed both in the plant and in the laboratory. We do not have the answer to just what is the trouble. We do know it is the wax and that such a difficulty has never before occurred in 10 years experience with this particular formula.

In some cases it may well be that the pure carnauba wax we are receiving varies from that of pre-war years due to more extreme methods of collecting. We understand from talking to various importers and others who are in touch with collection in Brazil that the leaves are beaten and shaken more thoroughly to obtain a greater yield. This may result in tailings which were rare a few years ago. I have had one report that hot water extractions are being used which would get out resins and other sap-like ingredients. These would likely change the character of the wax. Regardless of the increase in yield that such methods may gain, it undoubtedly obtains wax of lower quality and may be the cause of much of our difficulties. "Pure" carnauba wax of today may well be different from "pure" carnauba wax of yesterday.

In conclusion, it would seem that a specification should be worked out to cover the composition of carnauba wax. Poor quality carnauba wax must cause many floor wax manufacturers considerable difficulty. I would recommend that the Wax Committee of NAIDM study this problem. It should be possible to write a specification for carnauba wax which would cover a fairly uniform material using the flash point test, melting point, saponification number and certain selective solvent mixtures.

DDT DEVELOPMENTS

(*From Page* 111)

long lasting effects formerly obtained with DDT. In these tests, results with DDT were variable and generally unsatisfactory.

The pyrethrum piperonyl butoxide combination proved relatively ineffective. Two tests conducted in south Texas by the Kerrville, Tex., laboratory gave similar results.

Tests with Compound 497 and the DDT-methoxychlor and DDT-chlordane combinations will have to be repeated several times before their value for fly control can be determined.

Current Recommendations

IN view of the recent developments, the Bureau of Entomology and Plant Quarantine has made certain changes in recommendations for controlling the house fly. The following is a brief review of these revised recommendations:

1. Strict sanitation to prevent, insofar as practical, fly breeding on the farm or elsewhere. This is the number one recommendation. It means proper clean-up and disposal of breeding material such as manure, waste vegetable matter, garbage, etc. This practice should be adhered to regardless of the insecticide employed.

2. The second recommendation is to employ residual insecticides wherever possible where flies congregate outside of the dairy barns and milk rooms. This is emphasized in order to control flies before they enter the dairy barns, milk rooms, or other situations where some of the newer insecticides are not at present considered safe or desirable. On most farms this means treating such places as the beef cattle barns, calf pens, horse stables, hog pens, poultry houses, garbage cans, and other favorite places for flies.

For such situations DDT is recommended as the preferred material if it has continued to provide good control of flies. However, in the event DDT has given poor results, chlordane, gamma benzene hexachloride, and methoxychlor are suggested as substitutes.

3. The third recommendation is to apply methoxychlor residual treatments to the inside of the dairy barns. In the event additional control measures are required for satisfactory fly control, space sprays are recommended employing pyrethrum in combination with so-called synergists, especially piperonyl butoxide and n-propyl isomer or the commonly employed organic thiocynates.

4. A fourth recommendation is to exclude flies from buildings wherever practical by maintenance of tight-fitting doors and window screens.

It is believed that high standards of fly control can be maintained on most farms by following the procedures outlined. These recommendations are not as simple and will not prove as economical as the single insecticide treatment with DDT used formerly. However, for the present the proven ability of the house fly to develop tolerance to specific insecticides and the uncertainty of the safety of others may require that the dairy farmer employ several chemicals for controlling the house fly in the same way in which different insecticides are employed to protect his field crops, vegetables, or fruits from insect attack.

In employing any of the materials discussed, the users are reminded that insecticides should be used with caution. Unnecessary exposure of the operator and livestock, and contamination of foods, utensils, and animal feed should be prevented.

CLASSIFIED

(*From Page* 154)

Salesman: Chemical and Pharmaceutical technical background. Twelve years selling experience to industry and consumer, including: fungicides, bactericides, preservatives, detergents and sanitary chemicals. Executive experience in sales promotion, product and market development. Address Box 663, c/o *Soap*.

For Sale: Automatic powder packaging line for cartons—includes carton former, gluers, filler, etc. Also kettles, tanks, mixers, liquid filling, etc. Perry Equipment Corp., 1510 W. Thompson St., Phila. 21, Pa.

For Sale: Mixing machinery, pumps, storage tanks, water treating systems. Plant Equipment Co. Room N-123, Union Terminal Bldg., Cincinnati 3, Ohio.

KNOXALL

liquid

FLOOR WAX

can be shipped

in any temperature

The quality of KNOXALL Liquid Floor Wax is not affected by freezing—but returns to its original factory guaranteed liquid stage without separation or jelling.

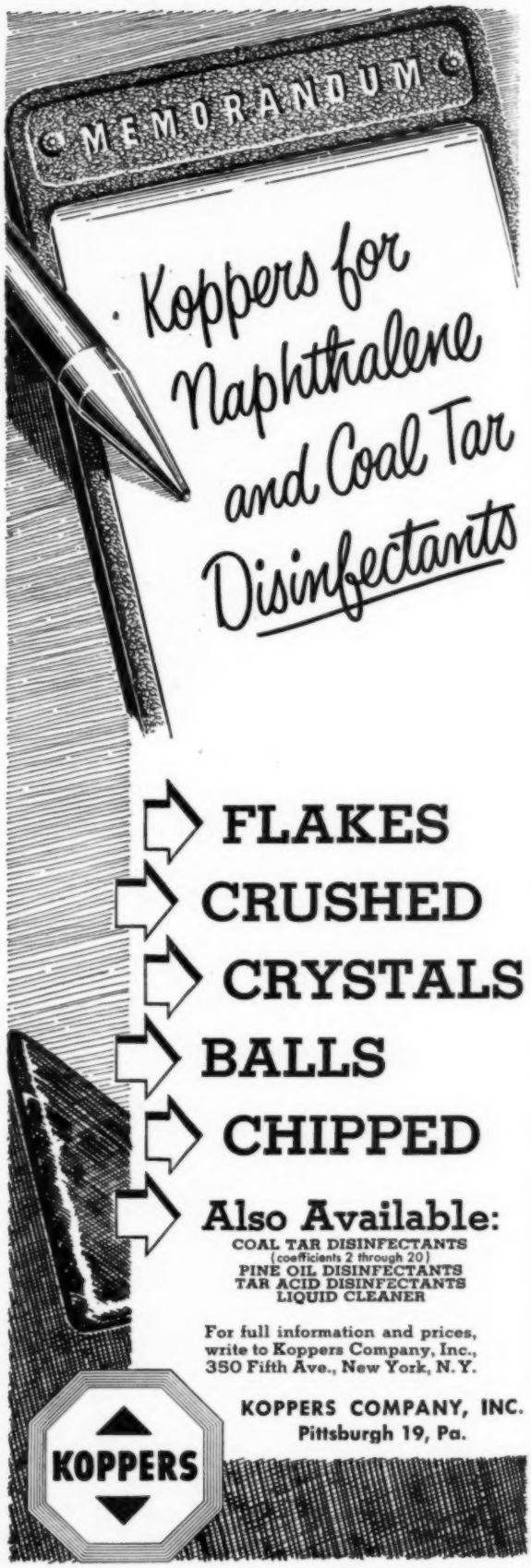
WRITE FOR *Sample*
AND LITERATURE . . .

This New KNOXALL Product is the result of years of careful research and laboratory tests. KNOXALL Liquid Floor Wax is suitable for every type of finish, can be applied smoothly and evenly and does not water-spot. Gives depth of luster and an appearance of a hard, glass like finish—without buffing.

also **MANUFACTURERS OF:**

- PURE COCOANUT OIL LIQUID SOAP
- VEGETABLE OIL-PASTE AND JELLY SOAPS
- LIQUID SCRUB SOAPS, BAR SOAPS
- POLISHES AND WAXES
- GREASE SOLVENTS
- RUG SHAMPOO
- TEXTILE OILS
- PINE DISINFECTANTS
- PRODUCTION CHEMICALS BY SPECIAL FORMULATION.

KNOXALL Corporation
1005 EAST SUMNER AVE.
INDIANAPOLIS 3, INDIANA



DISPENSERS

(*From Page* 119)

stream, has a heavy glass globe container, brass valve, "Neoprene" washers and stainless steel springs.

The "Lathurshelf" is a combination shelf and dispenser. The shelf is formed by the top of the long, narrow horizontal tank, and may be used for combs, brushes, toiletries or other articles. One or two valves may be attached. Made of stainless steel, the dispenser has a half gallon capacity tank, which delivers a measured quantity of creamy lather with each push-in stroke. Any grade of liquid soap from 8 per cent to 20 per cent anhydrous soap content may be used. In addition, the dispenser has a visible gauge liquid level; is theft proof and has a snap lock on the cover which can be opened only with a key. Tank systems that operate with liquid or lather valves complete the American Dispenser Co. line.

As competition grows keener in the dispenser line, the progressive dealers in this type of merchandise are endeavoring to produce items that have ready acceptance and give satisfactory service. With new materials coming into the market, and metals more freely available, one can look forward to a stream of improved soap dispensing machines in the years ahead.

Liquid soap dispensers are also made by Clifton Chemical Co. and Ampion Corp., both of New York. Their models will be covered in a later installment as well as those of Presto Mfg. Co., St. Paul, Minn.

SOAP ON SKIN

(*From Page* 34)

no gross evidence of any cutaneous reactions to either soap to which their hands had been exposed. Here again, no differences were noted between the mean cutaneous temperatures of the right and left hands. However, both mean values reported for this group of subjects are higher than the two mean values for the initial controls.

Pooling the data reported for the two hands in both the initial or control determinations and in the determinations made on subjects in Group I gives the results shown below.

A Student's "t" test = 11.3 indicates a significant difference between these two means. Hence, the data in the foregoing tabulation lead to the conclusion that, under the conditions of these tests, soap solutions contacting skin may effect increases in the temperature of the skin's surface in the absence of any visible signs of cutaneous reactions to the soap. Inasmuch as increases in volumes of blood flowing through the cutaneous vessels constitute the principal factor which effects rises in the temperature of the skin's surface, it is probable that the difference between the mean surface temperatures of skins of subjects' hands before and after immersion may reflect increases in rates of flow of blood through peripheral blood vessels in cutaneous areas exposed to the soap solutions. In the absence of any gross evidence of adverse effects on skin, this action of the soap solution on the cutaneous vascular system must be considered as stimulatory or benign.

In estimating the significance of the results for Groups II and III, temperatures determined on areas of skin which showed gross reactions to the soaps have been compared with temperatures of areas of skin of the other hand in which no visible reactions were observed. For 24 subjects in Group II, no significant difference was observed between the two means. However, the mean temperature of areas of skin which, in tests on 20 subjects, exhibited +++ reactions is significantly greater than the mean result for areas of skin of opposite arms which exhibited no gross reactions to soaps.

Groups	*Total Number of Determinations*	*Skin Surface Temperature—°F.* *Mean*	*Standard Error of Mean*	*Student's t Test*
Initial Controls	426	88.6	0.16	11.3
Group I	420	91.2	0.16	

Experimental results for Groups II and III have been combined in Group IV which gives a summary of data for 44 subjects showing adverse reactions to soaps. These areas of cutaneous irritation showed a significantly greater surface temperature than anatomically similar areas of skin which gave no evidence of irritant effects attributable to actions of soap. However, these latter cutaneous areas, in the absence of any signs of adverse effects of soap, did exhibit surface temperatures which were significantly higher than areas of skin prior to immersion in soap solutions. These findings support the deductions from the data for subjects classified in Group II, viz., soap solutions on contact with skin may exert stimulatory effects on the vascular system of the skin.

Summary

The utilization of patch tests and the repeated exposure technic as mutually supplementary procedures is recommended by the authors for purposes of evaluating the primary or direct actions and the cumulative effects of both direct and secondary actions of soaps on skin.

Determinations of skin surface temperatures may contribute to the differentiation of benign and adverse actions of soaps on skin and, also, they may aid in the quantitative evaluation of the latter actions.

CANADA SOAP

(*From Page* 36)

of $511,885. Soft soap production dipped slightly in 1947, being 5,741,664 pounds, worth $539,946, as compared with 5,799,110 pounds, valued at $375,250 in 1946.

Although brushless shaving cream production gained on the lather type, the output of which declined in 1947 from the previous year's total, production of the lather type is still about five times as great as that of the brushless.

Canadian soap imports in 1947, in terms of value of products, increased sharply, going from $962,469 in '46 to $2,817,766 in 1947. Although total figures on imports are not given, data for some products are

New wax type

GLASS POLISH

glass cleaner and waxer . . . newly developed and different product . . . in 55 gal. drums and other standard packages for the trade . . . ask for sample of this new product.

* * *

FLOOR WAX

COMPARE

The consumer wants high lustre at a competitive price . . . he gets it in our #1948 Wax . . . compare its high gloss against any other wax . . . send for sample and price . . . make your own comparison test.

BOSTON CHEMICAL INDUSTRIES, INC.
65 E. BROOKLINE ST. BOSTON 18, MASS.

PHENYL ETHYL ALCOHOL
BENZOPHENONE
NEROLIN
AMYL CINNAMIC ALDEHYDE
BENZYL ACETATE
YARA YARA

Basic raw materials for disinfectants, insecticides, soaps, perfumes, plastics, textiles, pharmaceuticals, lacquers, etc.

ASSOCIATED COMPANIES
KAY FRIES CHEMICALS, INC., NEW YORK, N. Y.
CHARLES TENNANT & CO., CANADA, LTD., TORONTO, CANADA

AMERICAN-BRITISH
CHEMICAL SUPPLIES, Inc.
180 MADISON AVE., NEW YORK

shown: laundry soap imports in 1947 were 8,514,627 pounds, worth $1,086,-150, as compared with 6,065,092 pounds, valued at $538,637, in '46. Imports of soap powders and powdered soap rose in 1947 to 8,370,588 pounds, worth $1,310,944, from 745,492 pounds, valued at $108,476 in 1946. Exports, in 1947 declined sharply. In 1946 they were 19,902,821 pounds, worth $2,103,382, as compared with 11,711,348 pounds, worth $1,640,-368 in 1947.

Raw material figures showed an increase in the amount of coconut oil used in 1947, as compared with 1946, 31,917,320 pounds and 23,455,-840, for the two years respectively. Tallow use was smaller in 1947, 77,-333,668 pounds, as against 82,157,174 pounds in '46. Whale oil in '47 was used at the rate of 2,418,698 pounds, as against 1946 usage of 221,422, pounds.

DANGER AHEAD

(*From Page* 102)

terials to the labelling of products in compliance with all state and federal laws.

The established manufacturer offers all-round quality at a minimum of cost. Under the old school of manufacturer-distributor cooperation, the manufacturer had an excellent outlet for his products and the distributor had an excellent source of supply which enabled him to offer products in which he had complete confidence. All netted a fair profit. We who live in the world of today have all had an opportunity to observe the fate of the person who becomes excessively hungry.

Right here, I would like to point out flagrant law violations that are taking place in our industry today. Some distributors that I have talked to are under the impression that the Federal Insecticide Act did not take effect until June of this year. They have not bothered to register their products. They have not as yet been "caught" and they so stated. "Why bother?" they say. Sooner or later, they will be cited and some of them will blame the manufacturers for not "taking care" of them—even after repeated offers have been made to do this very thing.

In various states where registration is required by law, many so-called "distributors" who do their own manufacturing were not acquainted with the fact that their state had registration laws. Nor are they enthusiastic about receiving advice on the new regulations. Ignorance is no excuse where the law is concerned but they will continue to take a chance until "caught."

BHC Now Lindane

The U. S. Department of Agriculture has just proposed adoption of a new common name for the gamma isomer of benzene hexachloride which is now to be called lindane. The name is restricted to use on products of a purity not less than 99%. The U.S.D.A. is also reported to be recommending use of lindane as a residual spray inside cow barns, in addition to methoxychlor, previously suggested as a replacement for DDT because of the toxicity hazard of the latter.

Perhaps by the time this happens, and they once again look to the manufacturer as a reliable and experienced source of supply for quality products that are in keeping with state and federal regulations, they will discover that the people who went to great expense to offer these benefits to them have been forced to take drastic steps in a keenly competitive market. In other words, the distributor will be forcing himself out of business. This is not a threat. It is plain common sense!

A good distributor has one purpose in the scheme of things and that is to distribute merchandise to the consuming public at a legitimate price and profit. Now, this is a full time job and can be a very profitable one if it is kept a full time job. If he dabbles in the manufacture of products, encroaching on the field of the manufacturer, he is wasting valuable time. If he does this in the method described above, which is usually the case, he certainly is doing so at a tremendous risk.

The manufacturer of products for the sanitary trade is being forced slowly to enter new fields which eventually will have an effect upon the distributors who are at present straddling the fence. The established manufacturer can give higher quality at lower price, better service, and certainly a wider variety of products than the distributor who splits his time trying to sell the consumer and dabbling in manufacturing.

I have outlined this situation before and I am repeating it here. It is a serious threat to our entire industry. Who is going to straighten it out? Wherein lies a common meeting ground and how can this impending upheaval be avoided?

QUATERNARIES

(*From Page* 105)

thus correlates more closely with field experiences. By the performance procedure and in the presence of 100 p.p.m. calcium, 200 p.p.m. of quaternary was required for the same kill that was given by 100 p.p.m. in the soft water. This indicates a similar reduction in efficiency by hard waters as shown by the first test method.

It was found that the reduction in germicidal activity by water hardness can be greatly offset by either the use of higher concentrations of quaternaries or by the addition of alkaline substances such as used in water softening, namely, carbonates, phosphates, etc. For instance, the addition of sodium carbonate to alkyl dimethyl benzyl ammonium chloride in a water containing 260 p.p.m. total hardness increased its sanitizing efficiency in hard water equal to its efficiency in soft water.

Acknowledgment

This project was part of a program on sanitizers, sponsored by the National Sanitation Foundation.

References

1. Ridenour, G. M., and Armbruster, E. H. "Some Factors Affecting the Properties of Quaternary Ammonium Compounds as Sanitizers." *Amer. Jour. Pub. Health* 38:504 April, 1948.
2. Armbruster, E. H., and Ridenour, G. M. "A New Medium for Study of Quaternary Bactericides." *Soap and Sanitary Chem.* 23:119 August, 1947.
3. Report of Subcommittee on Food Sanitation. "Technic for Bacteriological Examination of Food Utensils." *A.P.H.A. Yearbook*, Part II, 38:68 May, 1948.
4. Lawrence, C. A. "Inactivation of the Germicidal Action of Quaternary Ammonium Compounds." *Jour. Am. Pharm. Assoc.* Sci. ed. 37: No. 2: 57-61, Feb. 1948.

Spread and Power

Effective pest control requires wide spread of insecticide and the driving power to force it into every crack and crevice—under mouldings, behind baseboards, around plumbing, between cases and bales.

Mistmaster Ball Bearing Fan Type Sprayers have both the speed and the power to do a quick, thorough job. Driven by 1/3, 3/5, 1 or 1-1/3 hp. motors, they spray insecticides for distances as far as 40 feet, penetrate into hard-to-reach places, and spray large areas quickly, completely.

Here is a sprayer that has more power than any other portable sprayer, yet is convenient and easy to handle. Equipped with 1-gallon non-corrosive tank, driven under low pressure with a high volume of air, it can be used with any type of insecticide, either oil base or water base, and carries insecticides into remote openings in full volume and power.

Used anywhere, it plugs into any electric outlet, and is supplied with three nozzles for fine, medium, or coarse spray. Can also be furnished with 2-gallon tank and special nozzles or in special design to meet individual requirements. *Write today* for further details and complete specifications, or mail the coupon.

SPRAYER CORPORATION OF AMERICA
1708 Payne Street, Evanston, Illinois

- ☐ Send complete information on MISTMASTER Ball Bearing Fan Type Electric Sprayers.
- ☐ We are interested in details of your dealer franchise.

Name .....
Address .....
City ..... Zone.... State.....

Sprayer CORPORATION of AMERICA
1708 PAYNE STREET, EVANSTON, ILL.

IRON HORSE

IRON HORSE GALVANIZED WARE

A QUALITY LINE FOR THE JANITOR SUPPLY TRADE

← **WATER PAILS**
Available in 12, 14 and 20 quart capacities — Medium, Heavy and Extra-Heavy grades. WRITE FOR BULLETIN No. 237.

GARBAGE PAILS — NESTABLE TYPE →
Three popular sizes, 6, 8 and 11 gallon . . . Standard and Heavy grades. Corrugated and desired smooth side types. WRITE FOR BULLETINS No. 8 and No. 10.

← **GARBAGE CANS NESTABLE TYPE**
Large sturdy cans in 20, 22, 24 and 32 gallon sizes. Standard, Heavy and Heavy Duty grades. WRITE FOR BULLETINS No. 22, No. 24, No. 32 and No. 42.

OILY WASTE CANS →
UNDERWRITERS' LABORATORIES APPROVED. Foot and hand-operated types. Full-bodied construction, positive gravity-closing cover among many unusual features. WRITE FOR BULLETIN No. 18.

Manufacturers of Wash Tubs, Rubbish Burners, Steel Baskets. *Write for descriptive literature.*

ROCHESTER CAN COMPANY
88 Greenleaf St. Rochester 9, N. Y.

TRADE NEWS

Synthesizes Pyrethrins

S. B. Penick & Co., New York, reported recently that their Jersey City laboratories have succeeded in putting into limited commercial production, the allyl homolog of Cinerin I, a synthetic pyrethrum material. Initial tests made on houseflies in Peet-Grady chambers indicate that the synthetic product is as toxic as the natural material, according to Harold Noble, Penick vice-president. Use of the material for control of other insects is being studied.

Production of the pyrethrin-like esters almost identical in structure with the insecticidal principles in natural pyrethrum was announced March 15 by the U.S. Department of Agriculture. The announcement by the Penick Company of commercial production of synthetic pyrethrum is said to mark the first successful attempt to produce the material on a scale larger than laboratory samples.

Limited quantities of the allyl homolog will be available to insecticide manufacturers within a short time, the company has announced.

West Lehn & Fink Sales Mgr.

Eugene N. West, formerly sales manager for U. S. Time Corp. and Bauer & Black, New York, was recently named general sales manager of the Lehn & Fink Division, Lehn & Fink Products Corp., Bloomfield, N. J. He succeeds D. J. Finlayson, who has joined Compton Advertising Agency, New York.

Parkinson in New Post

The advancement of T. Carter Parkinson to the post of assistant sales manager in charge of insecticide sales was announced recently by Charles P. McCormick, president, McCormick & Co., Baltimore. Mr. Parkinson became affiliated with the McCormick organization following his separation from the Army Air Forces in which he served as a lieutenant colonel. He holds a large number of medals for his services during the war. He is a member of the Board of Governors of the N.A.I.D.M.

T. CARTER PARKINSON

Mr. McCormick also announced the appointment of J. Stuart Wolf to assistant sales manager in charge of the southwestern territory and of Edgar K. Crone as special assistant to the general sales manager.

Hyman Ruling Reversed

The following release has been received from Julius Hyman & Co., Denver, Colo., in connection with its litigation with Velsicol Corp., Chicago, over patent rights on the insecticide, chlordane:

"In a decision reversing the Superior Court of Cook County, the First Division of the Appellate Court of Illinois on Monday, June 20, 1949, ruled in favor of Dr. Julius Hyman in the suit for ownership of the patent applications on chlordane. . . . This suit had been instituted by Velsicol Corporation of Chicago.

"Title to the chlordane patent applications has been in litigation since 1946, when Dr. Hyman left his position as executive vice-president of Velsicol Corporation and subsequently organized Julius Hyman & Company.

"Since 1947, the Hyman Company has been engaged in the manufacture of chlordane under the brand name, 'Octa-Klor,' at its plant at the Rocky Mountain Arsenal, Denver, Colorado."

The decision of the Appellate Court is being appealed to the Illinois Supreme Court by Velsicol Corporation. Velsicol points out in a statement announcing its intention to appeal that purchasers of chlordane from Velsicol cannot become involved in litigation. It has never been contended that Velsicol Corp. does not have the right to make and sell chlordane, the only point at issue having been whether or not Velsicol possesses the "exclusive" right to make the product.

F.T.C. Holds Wax Hearing

Proposed trade practice rules for the floor wax products industry were issued June 23, by the Federal Trade Commission, Washington, D. C. At the same time the Commission announced a hearing July 11 at the F.T.C. Building in Washington, D. C. The hearing was to be held to give interested parties an opportunity to express their views. After due consideration, the Commission will proceed to final action on the proposed rules.

The first eight of the proposed 19 rules are specifically related to the floor wax products industry and contain minimum specifications for the use, as descriptive of industry products, of terms such as "wax," "slip proof," "slip resistant," "waterproof," "water resistant," "spot proof" and "heavy duty." The remaining 11 rules cover other forms of misrepresentation.

NSSA '50 Meeting Date

The 27th annual convention and trade show of the National Sanitary Supply Association will be held at the Hotel Stevens, Chicago, May 7, 8, 9 and 10, 1950, it was announced recently by the NSSA. The move to the Stevens Hotel has been made to secure the larger exhibition hall at that hotel.

May continues to be the favorite month for the trade show and annual meeting of the NSSA, according to Leo J. Kelly, executive vice-president, who reported recently on a vote taken to determine in what month

NOW!

Something new from

PER-MO

Let PER-MO help you crash through sales resistance!

NOW . . . an expanded PER-MO Private Label Service . . . in addition to the well-known PER-MO line of rodenticides, mothproofer and flame-proof liquid, we can offer full formulating, manufacturing and packaging services for

POLISHES — **CLEANSERS**
INSECTICIDES — **SCOURING POWDERS**
DEODORANTS — **HAND SOAPS**
SANITIZERS — **GLASS CLEANER**

and other chemical specialty products . . . tailored to meet your individual requirements . . . packed and ready-to-sell under your own brand. Tell us what the product is and let us work out formulation and package for you. Save space and muss in your own plant.

Consult PER-MO if you have a private label problem!

PER-MO PRODUCTS CO.

Original Makers of Per-Mo Mothproof Liquid
3602-04-S Woodland, Kansas City 3, Mo.
WRITE TODAY. FULL PARTICULARS FIRST LETTER

Also, remember that the long established line of PER-MO PRODUCTS are still active sellers and money-makers for jobbers . . . they can be had under PER-MO BRAND or under your own brand, as follows:

5 Year Guaranteed

***Per-Mo Mothproof Liquid**
packed in Pints, Quarts, ½ gal., gal. and 5 gal. containers or in Drums.

***Per-Mo Flameproof Liquid**
packed in Drums or gal. Containers.

***Per-Mo Rat & Mice Liquid**
packed in 8 oz. bottles or in Gals.

***Per-Mo Rat Bits**
made with RED SQUILL (Fortified) packed in 4 oz., 16 oz. and in Bulk.

***Per-Mo Rat Paste**
made with RED SQUILL (Fortified) packed in 4—8 and 16 oz. jars.

***Per-Mo Brown Rat Killer**
made with ANTU. Packed in 4—8 and 16 oz. jars.

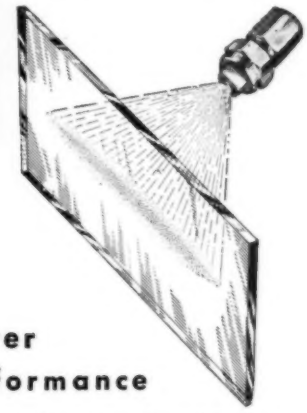
PER-MO
STANDS THE TEST
IT'S BY FAR THE BEST

Cresylic Acid

HIGH BOILING TAR ACID
CRESYLIC
CREOSOTE
NAPHTHALINE

MIRVALE CHEMICAL CO. LIMITED
Mirfield, Yorks. Phone Mirfield 2157

SPRAYING SYSTEMS
TeeJet
SPRAY NOZZLES



BODY

CAP

STRAINER with monel metal screen

interchangeable ORIFICE TIP

better performance

For the residual spraying of insecticides, you will find TEEJET spray nozzles give the uniform distribution and proper atomization necessary for an effective spraying job. TEEJET spray nozzles are precision built with a wide range of interchangeable orifice tip sizes. Write for complete information.

SPRAYING SYSTEMS CO.
Engineers and Manufacturers
3217 RANDOLPH STREET • BELLWOOD, ILLINOIS (Suburb of Chicago)

members preferred the meeting and show to be held. May received 41 per cent of the votes as against 18 for December. The possibility of holding the annual gathering in some city other than Chicago will be discussed at the 1950 annual meeting.

NAIDM Meeting Dates

The National Association of Insecticide & Disinfectant Manufacturers will hold its 36th annual meeting at the Hotel Mayflower, Washington, D. C., Monday and Tuesday, Dec. 5 and 6. Other meeting dates recently announced by the association include the 36th mid-year meeting to be held at the Hotel Drake Chicago, Monday and Tuesday, June 12 and 13, 1950, and the 37th annual meeting at the Hotel New Yorker, N. Y., Dec. 4 and 5, 1950.

The NAIDM, will begin the use of its new name, Chemical Specialties Manufacturers Association, in December, 1949.

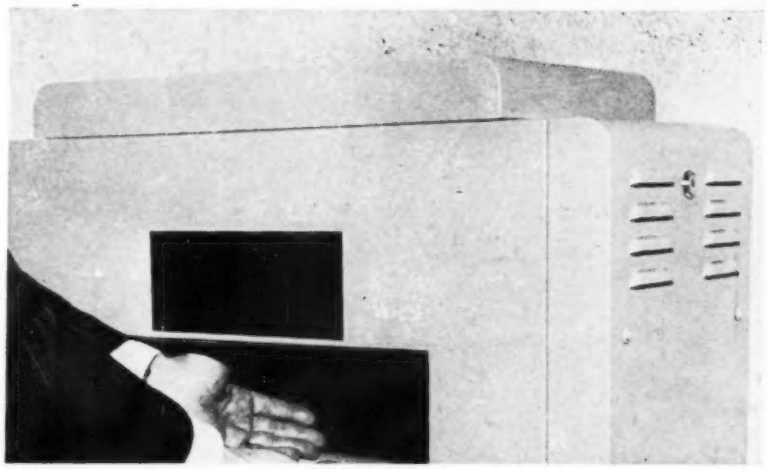
New Sabadilla Label Rule

Manufacturers of insecticides containing Sabadilla seed are required to show the material on the label as "Alkaloids of Sabadilla" if the Sabadilla seed is declared as the active ingredient, according to a recent ruling of the Insecticide Division, Production and Marketing Administration, U.S.D.A. The ruling on Sabadilla insecticides has been made because of the fact that the insecticidal effectiveness of the material depends entirely upon the alkaloids contained in the seed. In order to comply with the terms of the Federal Insecticide, Fungicide and Rodenticide Act, Sabadilla seed or "activated" Sabadilla seed, if the active ingredient, should be listed as follows:

Active Ingredients
Alkaloids of Sabadilla.....—%
Inert Ingredients .....—%
Total 100%
(The correct percentages to be inserted)

A supplemental statement may be added giving the percentage of Sabadilla seed.

Labels of products already registered declaring the active ingredients as Sabadilla (or activated) seed are not required to be discontinued immediately. A reasonable time for use of labels is being permitted by the U.S.D.A. However, labels are required to be revised to comply with the new ruling and should be put into use not later than for next season's business.



This new Electronic Towel will dry and sanitize the hands in less than 30 seconds, the manufacturer, Electronic Towel Corp., New York, claims. Wet hands placed in the horizontal opening start the drying operation with no contact with switches or levers. The machine shuts off automatically.

New Eston Insecticide

"Alkron" is the name of a new organic phosphate insecticide developed recently by Eston Chemicals, Inc., Los Angeles. The new product is designed to be used in the control of aphids, spider-mites and other pests.

NAIDM Opposes Government Manufacturing

RESOLUTIONS unanimously adopted at 35th mid-year meeting of the NAIDM at the Hotel Drake, Chicago, June 13 and 14, included those approving the term "pesticides" for referring to insecticides, rodenticides, fungicides and herbicides; another opposed the manufacture or production by any governmental agency for its own use or for sale or distribution by it of those products which can be and have in the past been purchased from private manufacturers on competitive bidding. Another resolution opposed the enactment of any additional legislation by Congress which would vest in any other agency of the Federal Government (other than the Dept. of Agriculture) jurisdiction over any phase of the production, shipment or sale of pesticides.

The association further went on record as endorsing the principle of cooperation between federal and state officials in pesticide enforcement work as best promoting the interest and welfare of the consumers, and opposed high registration fees by states as a needless duplication and burden upon the consumer of pesticides without resultant benefits. Resolutions were also unanimously adopted expressing appreciation and commendation to the program committee and Melvin Fuld, its chairman, for the outstanding program of the meeting; to association and non-association members, alike, for aiding in the program. Another resolution recommended members through their traffic officials to bring to the attention of the association's executive board matters pertaining to transportation costs. Regret on the death of A. M. W. Carter, associate chief, Pesticide Service, Canadian Department of Agriculture; appreciation to John Powell, who served the association for 14 years as treasurer; and felicitations to Dr. Alvin J. Cox on his 74th birthday were also contained in resolutions adopted at the meeting.

SPRAY
PERFUME COMPOUNDS

- Theater
- Household
- Wick Type
- Deodorants
- Insecticides
- Water Soluble

. . . A Special Compound for all Spray Products. Formulas of the highest quality to meet your cost limitations in a selection of

26 Popular Fragrances

For recommendations and samples send along a sample of your product today. No obligation, of course.

Perry Bros., Inc.

For Scents with Sense

220 Flushing Ave., Brooklyn 5, N. Y. UL 5-2777

WHATEVER YOUR CUSTOMERS WANT IN POWDERED HAND CLEANERS You've Got with Mione

Mione M-1 (Regular) "Work horse" of the Mione family. A scientific blend of Coconut Oil Soap, inorganic scrubbers and Lanolin. *For Very Dirty Hands.*

Mione M-2 Contains a corn meal scrubber, Coconut Oil Soap and Lanolin. A fast, efficient wash-up for both men and women. For those who prefer this type scrubber.

Mione M-O-3 (For Office & Home) A deluxe product. Contains Coconut Oil and is the mildest soap possible. Also contains Lanolin. Delightfully perfumed. No scrubber. Entirely soluble.

Mione M-4 Newest member of the Mione family. Contains a wood flour scrubber, Coconut Oil, Lanolin and all cleaning and healing agents used in our other formulas.

IMPORTANT!
Your profits are HIGH when you sell Mione Powdered Hand Soaps because our jobber discounts are extremely liberal. Prices and samples will be gladly furnished on request. Send for yours — NOW

MIONE MANUFACTURING COMPANY
Makers of fine hand cleaners for over 30 years
COLLINGDALE PENNSYLVANIA

CETYL ALCOHOL

High quality now again available

Ask for sample

AMERICAN ALCOLAC CORPORATION
51 East 73rd St., NEW YORK 21
Phone: REgent 7-8228, 7-8145

GUM ROSIN

A PRODUCT OF THE LIVING PINE

USERS of GUM ROSIN prefer this excellent product because it is made from the gum of the *living pine tree* – the *original*, *standard* rosin.

The finest rosin that can be produced, GUM ROSIN is available with a high degree of uniformity to meet industrial needs. All standard color grades – consult your local supplier for prices and specifications, or write

AMERICAN TURPENTINE FARMERS ASSOCIATION
General Offices: **VALDOSTA, GEORGIA**

FTC Poisons Ruling

The Federal Trade Commission indicated recently that insecticides and other economic poisons which have been accepted for registration and the advertising claims concerning their efficacy approved by the Secretary of Agriculture will not be subject to complaint by the F.T.C., on the efficacy of the claims, even though the commission may differ with the secretary on this point. The F.T.C. recently dismissed an action brought against I. I. Marshall, Home Service Co., Deerfield, Ill., who was charged with misrepresentation of cleaning and moth-proofing solutions. The complaint had been issued prior to the enactment in 1947 of the Federal Insecticide, Fungicide and Rodenticide Act.

Noting that the preparations were "economic poisons" within the meaning of the Act and that the advertising claims concerning their efficacy against moths and carpet beetles had been approved by the Secretary of Agriculture, the commission ruled that no further corrective action should be taken in the matter at this time.

Acquires Rutland Co.

A. J. Anderson recently acquired the controlling interest in United Chemical Co., sanitary specialty firm of Rutland, Vt., by purchasing the stock of the former partners. Except for minimum amounts of stock held for directorships, Mr. Anderson stated that he now owns the entire issue.

Markets New Sweep

Empire Brush Works, Port Chester, N. Y., recently announced the "Blackstone," a new all-nylon floor sweep with a steel handle. The broom is available in seven block lengths ranging from 12 to 16 inches and is hand made.

New Oronite Quaternary

A new cationic surface active agent, an alkybenzyl trimethyl ammonium chloride, is being marketed in pilot plant quantities by Oronite Chemical Co., San Francisco, under the name "Quaternary Ammonium Chloride ATM-50." The new product is a colorless, odorless solution stable under all reasonable conditions of use, and is said to be compatible with nonionic detergents and with various inorganic builders such as tetrasodium pyrophosphates.

R. I. Stirton, manager of the company's product development department, said the company is making plans to shift from pilot plant to commercial production in the near future.

To Make Insecticides

Ore and Chemical Corp., New York, and Sterling Chemicals, Inc., Newark, N. J., recently merged and will make insecticides and synthetic resins as well as distribute various chemicals. The firm, to be known as Sterling Chemical and Ore Corp., will have its executive headquarters at 80 Broad Street, New York. Manufacturing operations will be carried on at the Sterling plant in Newark.

Crown Supply, Inc., early this month moved its warehouse and offices to larger quarter at 600 Newton Place, N. W., Washington, D. C.

Buys Airosol Plant

The plant of Airosol, Inc., at Neodesha, Kansas, was purchased recently by John Matthews who will continue the manufacture of "Airosol" brand DDT dispensers and jet dispensers. An eventual expansion of facilities to include bomb sprays for fumigation, deodorants, floor waxing and other products is contemplated by Mr. Matthews. Airosol Co. was formed by W. J. Small in 1945 to manufacture aerosols for Government use during the war.

Cont. Car-Na-Var Earnings

Net income of Continental Car-Na-Var Corp., Brazil, Ind., for the six months ending Mar. 31 was $21,831 or 6c a share on net sales of $371,480.

Concord Chem. Co. Builds

Concord Chemical Co., manufacturer and jobber of chemicals and waxes, recently started construction on new offices and laboratories at Mooretown, N. J. The firm at present has a manufacturing plant at Moorestown and offices in Philadelphia.

"Rodan Mouse Mix," a new mouse killer has just been introduced by Walsh Laboratories, Chicago. Packed in an orange and black container, a cellophane window cut out in the shape of a mouse shows the actual seeds. The company also offers "Rodan" rat killer.

THE WISCONSIN ALUMNI RESEARCH FOUNDATION

Offers The Services Of Its

INSECTICIDE TESTING LABORATORY

for the

BIOLOGICAL EVALUATION of AGRICULTURAL and HOUSEHOLD INSECTICIDES

Included in our services are: fat and oil constants, spectro-photometric analyses, fungicidal and bactericidal evaluations, and biological evaluation of chemicals for insecticidal activity. Write for details.

THE WISCONSIN ALUMNI RESEARCH FOUNDATION

P. O. Box 2059 Madison, Wis.

ELKO

COLORODORS

(Combined Color and Perfume Oil)

for Paradichlorbenzene and Napthalene

Any Color and Odor Combination or Without Color

$2.50 and $5.00 per Pt. $18.00 and $36.00 per gal.

WATER SOLUBLE PERFUME OILS

for Sprays, Liquid Soap, Deodorants and Disinfectants

$2.00 per Pt. ALL ODORS $14.00 per gal.

SERIES 300 OILS

for Sprays, Liquid and Cake Soaps

Large Assortment of Odors

$3.25 per lb. In 5 lb. quantity $3.00 per lb.

ALCOHOLIC EXTRACTS

for Sprays, Clay Cones and Disseminators

Write for our Price List of new low prices

Samples Cheerfully Furnished.

For 30 years, we have served a satisfied clientele, always ready to assist in solving problems.

E. M. LANING COMPANY

IRVINGTON, N. J.

Get the **PRICE** and the **DEAL** on

RED-CAP VACUUM

The QUIET Wet and Dry Pick-Up PORTABLE VACUUM CLEANER

Dealers: Back of Red-Cap is the combined 100-year experience of 4 men who know the vacuum cleaner field from A to IZZARD. That's why RED-CAP can make good on its claims of

- **BETTER CONSTRUCTION**
- **BETTER PERFORMANCE**
- **BETTER DEAL**

Get full details of operation and construction.

Write to

RED-CAP VACUUMS MFG. CORP.

207 EAST 34th STREET NEW YORK, N. Y.

MU 3-3925

Sells on Sight

The Bobrick 24 Liquid Soap Dispenser

Created by a leading industrial designer, this modern unit is a complete break with the past. It combines beauty with mechanical perfection and introduces completely new features never before found in a Liquid Soap Dispenser.

BOBRICK MANUFACTURING CORPORATION

1214 Nostrand Ave., Brooklyn 25, N. Y.

1839 Blake Ave., Los Angeles 26, Calif.

New State Pesticide Laws

California Assembly Bill No. 919, amending the State's Agricultural Code, Section 1064 and 1071.2 and addition to Section 1064.2, was approved June 4, 1949. Another State pesticide law that goes into effect in November of this year, is Michigan House Bill 362.

As a result of the continued sale of many unregistered insecticides, the state of North Carolina is planning more rigid enforcement of its state law governing the sale of pesticides, it was learned recently. Although 263 manufacturers have registered 1,501 different brands of pesticides this year, some unregistered products are known to be still on the market, according to insecticide inspector K. W. Ballentine. "Most of the reputable manufacturers are trying to comply with the law," he said, "but we know that some unregistered products are still on the market."

Forms Consulting Firm

S. B. Soloway, formerly research chemist with J. Hyman & Co., Denver, and also connected with the Bureau of Entomology and Plant Quarantine, Beltsville, Md., recently announced the establishment of consulting laboratories at 476 Milford St., Brooklyn.

Sweeping Firm To Move

Cotto-Waxo Co., manufacturers of floor sweeping compounds, is planning to move to a new building now under construction at 2745 Papin St., St. Louis, some time in August, it was announced recently. The new building will contain 15,000 square feet of floor space on one floor and will cost $85,000.

USI Appoints Bonnell

Appointment of Dr. Daniel E. Bonnell as technical representative for California and Arizona was announced recently by U. S. Industrial Chemicals, Inc., New York. Dr. Bonnell formerly was president and general manager of the Western States Chemical Corp., Denver. His duties include supplying technical assistance to insecticide manufacturers and developing new applications for the company's products in the field of food and food product protection. His territory is part of

DANIEL E. BONNELL

the Pacific Coast Division, of which R. E. Alexander is manager. Dr. Bonnell's headquarters will be in Los Angeles.

A graduate of the University of Washington, Dr. Bonnell received a Doctor of Philosophy degree from Oregon State College. He served as an officer in the Army during World War II, being discharged as a lieutenant colonel.

NSSA Film Progress

A number of officers of the National Sanitary Supply Association visited Louisville, Ky., recently for a final view of the Association's film on floor care. Following approval of the film and script, the work of printing was to begin, preparatory to distribution, which should take place later this month. The entire cost of the film will be around $5,900.

N.E.P.C.A. Outing

The New England Pest Control Assn. recently announced that it will hold a three-day outing, Friday, Saturday, and Sunday, Sept. 9-11, at Boothbay Harbor, Me. Women are invited. Representatives of eight eastern local associations and officials of the National Pest Control Assn., will participate in a pre-convention session, Friday evening, Sept. 9. Fred Payne, Governor of Maine, will be the principal speaker at the banquet Saturday night, Sept. 10. Activities will include deep sea fishing, a coastal cruise, sightseeing trips, golf, swimming, etc.

Test DDT Effect On Birds

The U. S. Departments of Agriculture and Interior currently are investigating the effect of spraying Dutch elm trees with DDT, which is said to have resulted in the deaths of a number of birds. About a dozen dead birds were picked up following experimental spraying of elm trees in Princeton, N. J.

A joint investigation now being conducted is expected to indicate the hazards involved in the program, and should provide information for making specific recommendations. However, until this information is available the department is unable to recommend a treatment that will give positive protection for elms without at the same time risking the loss of some birds.

Enters Mayoralty Race

Charles Brown of Fickett-Brown Mop Manufacturing Co., Atlanta, and a member of the National Sanitary Supply Association, recently announced his candidacy for the office of Mayor of Atlanta, Ga. He is a former Fulton County Commissioner.

To Discuss Sanitation

The appointment of a committee of three to discuss the views of the U. S. Public Health Service and the U. S. Department of Agriculture, Insecticide Division, regarding the interpretations of the functions of sanitizing agents and to conciliate divergent views was voted at the joint Disinfectant and Sanitation meeting at the 35th mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers, held at the Hotel Drake, Chicago, June 14.

New Cresylic Plant

Merichem Co., Houston, Tex., recently announced completion there of its new plant for the manufacture of cresylic acid. The new plant, located on an 18 acre site near the Houston Ship Channel, cost about $500,000. Three boiling ranges of cresylic are being produced: 183-205°C., 205-230°C. and 230-245°C. The material is said to be highly refined and of high purity. F. E. Lewis is president; J. T. Files, vice-president and treasurer, and R. D. Loesby, vice-pres. and sec'y.

Available at Reasonable Prices

PALM OIL SOAP

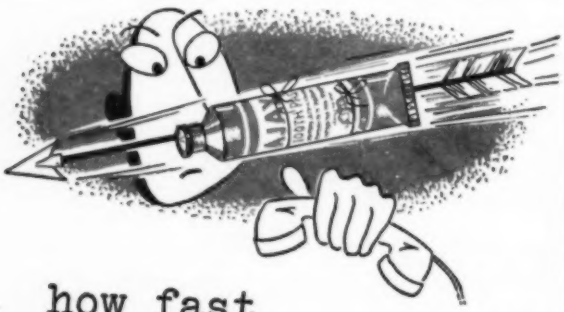
THE characteristic soft, creamy lather produced by palm soap is well recognized by experienced manufacturers of complexion and bath soaps. Straight palm soap powder (approx. 90% anhydrous soap) is now offered by the bag or carload, at prices below the cost of palm oil itself.

Heavy-duty and all-purpose Built Palm Soap powders are also available. Or we will compound our palm soap base with building agents according to your specifications.

Write for Technical Bulletin and current quotations

GENERAL BIOCHEMICALS, INC.

59 LABORATORY PARK CHAGRIN FALLS, OHIO



how fast
can tube service be?

Answer: Before you've finished phoning your order? No—but as fast as every operation under one roof will permit. And Sheffield service is complete. We're equipped to design and manufacture tubes and tube cartons and, if your facilities are inadequate, even to fill, pack, and ship your finished product. Leading users know, by half a century of experience, that Sheffield services are speedier — and always dependable. Write today for free illustrated catalog.

THE SHEFFIELD TUBE CORP.

Formerly Named New England Collapsible Tube Co.

Home Office . . . New London, Conn.

SALES OFFICES

New York 18 . . . 500 Fifth Ave., Dept. S-5
Chicago 16 . . . 3132 Canal St., Dept. S-5
Los Angeles 38 . 7024 Melrose Ave., Dept. S-5

for low cost, dependable, time proven performance

On every liquid mixing job

You can handle your mixing or blending operations simply and economically with an Alsop "Hy-Speed" Mixer. You'll find it easy to clamp to any container and adjust the shaft and propellers to the position best suited to insure the particular mix, blend or suspension your product requires. Write for complete information giving details of liquids and quantities to be handled.

STURDY PORTABLE EASY-TO-MOUNT

Alsop Portable "Hy-Speed" Mixers equipped with our easy-to-mount, quickly adjustable clamp are at work on soaps, insecticides, disinfectants, and allied chemical specialties. Standard shafts and propellers are made of Stainless Steel, although many other metals and materials can be supplied. Available in a wide range of horse-powers, propeller combinations and speeds.

ALSOP ENGINEERING CORPORATION
407 Green Street, Milldale, Conn.

ALSOP ENGINEERING CORP.
Filters, Filter Discs, Mixers, Agitators, Pumps and Tanks

ROSBY

THE MARK OF QUALITY

Crosby Chemicals, Inc., with two large modern plants in full production and with an abundant supply of raw materials can take care of your requirements of—

STEAM DISTILLED WOOD TURPENTINE
HEAT TREATED PALE WOOD ROSINS
TERPENE HYDROCARBON SOLVENTS
HEAT TREATED FF WOOD ROSIN
STEAM DISTILLED PINE OILS
NAVAL STORES SPECIALTIES
RESINOUS CORE BINDERS
LIMED WOOD ROSINS
PALE WOOD ROSINS
BEREZ WOOD RESIN
ALPHA TERPINEOL
TERPIN HYDRATE
BETA TERPINEOL
P. E. ESTER GUM
FF WOOD ROSIN
BETA PINE OIL
ALPHA PINENE
ESTER GUMS
PAPER SIZE
GLOSS OILS
ROSIN OIL
DIPENTENE

U. S. GOVERNMENT INSPECTED AND CERTIFIED

Crosby Chemicals, Inc., is the only producer of Steam Distilled Wood Naval Stores Products who at present is authorized to mark their products "U. S. Government Inspected and Certified" at source of production.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

CROSBY CHEMICALS, INC.

DE RIDDER, LOUISIANA

Plants: Picayune, Miss., and De Ridder, La.

Termite Repellent Booklet

A booklet, "Termite Repellents: A Summary of Laboratory Tests" by George N. Wolcott and published by the Agricultural Experiment Station, University of Puerto Rico, Rio Piedras, P. R., was received in the U. S. recently.

Koppers Personnel Shifts

Koppers Co., Pittsburgh, recently announced the following changes in the chemical division: Ellsworth E. Kimmel has been appointed assistant to the technical advisor; Harold D. Cooper, former assistant, has been named eastern district sales manager and George W. Hooker has been appointed chief engineer.

Three new appointments in the Tar Products Division also were announced: V. H. Viot has been named manager of the divisional control section; A. K. Black, III, has assumed the post of manager of the personnel section of the division and F. L. Byron has been appointed assistant manager of the Production Department.

NPCA Termite Study

The National Pest Control Association recently announced that it has begun a comprehensive study to revamp its approach to subterranean termite control. Recommendations on this work will be reported and acted on at the 17th annual convention to be held in Los Angeles, Oct. 17-19. The Termite Committee is reported to have completed proposals that will become "Accepted Reference Procedures" for approximately 50 different elements of construction.

McCormick ILO Delegate

Charles P. McCormick, president of McCormick & Co., Baltimore, was recently appointed by President Truman as the United States employer delegate to the International Labor Organization Conference, held in Geneva, Switzerland, June 8.

Issues Sprayer Data

The National Sprayer & Duster Association, Chicago, is advising its members that the best way to sell sprayers is to demonstrate them. In a series of bulletins, the Association is offering suggestions designed to help in carrying out the demonstrations.

Flanagan Penick V.P.

James G. Flanagan, general council, secretary and a director of

K. A. LAWDER

J. G. FLANNAGAN

S. B. Penick & Co., New York, was recently elected a vice-president. He joined the firm in 1938. At the same time it was announced that Kenneth A. Lawder was elected treasurer.

Kilgore in Commerce Post

The appointment of Dr. Lowell B. Kilgore, Kilgore Chemicals, Inc., Washington, as acting chief of the Chemicals Division, Department of Commerce, to succeed Frederic Arden, was announced recently by the Office of Domestic Commerce. Mr. Arden, who has been chief of the Chemicals Division since its formation last year, has resigned to return to private industry.

Packaging Institute To Meet

The 11th annual forum of the Packaging Institute, New York, will be held Oct. 24-25-26 at the Hotel Commodore, New York.

Elect Bartlett

Edwin R. Bartlett, president, Hooker Electrochemical Co., Niagara Falls, N. Y., was elected a board member of the National Industrial Conference Board meeting at the Waldorf-Astoria, New York, recently. The Conference Board is a non-profit organization which gathers, tests, distributes, and explains facts relating to the establishment of management, labor, governmental and economic policies to accelerate industrial progress.

Penn Salt Changes Sales

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced the appointment of Albert H. Clem as assistant sales manager of the special chemicals division, of which he will assume the duties formerly performed by Philip C. Staples, Jr., who has been transferred to the heavy chemicals division as a product supervisor. In addition, George D. Grogan has been transferred to the heavy chemicals division. He was formerly assistant to R. S. Roeller, field sales manager of the division. On June 1, Mr. Roeller became manager of the heavy chemicals division and Fred Prince became chairman of the centennial committee of the organization.

Ease Tin Container Rules

Allocation orders controlling industrial uses of tin were eased recently by the Office of Domestic Commerce, Washington, D. C. Changes in allocation order M-81 permit use of .25 tinplate or special-coated manufacturing terneplate for packaging any product, and the use of .50-pound tinplate in the production of all hand-soldered cans, drawn necks and nozzles, and soldered parts of all 5-gallon square cans.

Among the items specifically listed as entitled to use tin cans are disinfectants and germicides, which can use a .50-pound tinplate; insecticides and fungicides, and soap (liquid, synthetic detergents), which can use 1.25-pound tinplate. Paste soap is limited to .50-pound tinplate.

A bill to continue distribution controls over tin and tin products until June 30, 1950 was reported favorably to the House by the House Banking and Currency Committee. The bill is expected to be passed without opposition.

New Sweeping Spec.

A proposed revision of federal specification P-C-591a for sweeping compound has just been announced by the National Bureau of Standards, U. S. Department of Commerce, Washington, D. C. The complete text of the new proposed specification will be published in the August issue of *Soap & Sanitary Chemicals.*

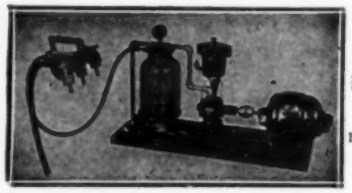
BOTTLING OPERATIONS

"SCIENTIFIC"

portable

VACUUM FILLER

Fills directly from drum, pail or demijohn; no overhead tanks required. Suitable for bench or tray work; also fills containers in original shipping cartons.



FOR

perfumes
to nail polish

meat sauces
to silver polish

FOR Pharmaceuticals, Extracts, Syrups, Beverages, Wines, Whiskies, Insecticides, Washing Fluids, Chemicals, Etc.

FILLS vials to gallons; all cans including quarts. Our many years of "Know-How" at your disposal in making special filling handles for every shape of container, every type of liquid. Quick change-overs. Cleans itself automatically in 5 minutes.

OUTPUT about 50 to 150 gross daily.

ACTUALLY PAYS FOR ITSELF IN A FEW WEEKS!

SCIENTIFIC FILTER CO.

Mfrs. of Filters; Filling, Capping, Labeling Mchy.

2 FRANKLIN SQUARE NEW YORK CITY 7, N. Y.

CERTIFIED COLORS

A broad range of shades for Shampoos, Soaps, Drugs, Medicines, Creams, Rinses, and Cosmetics.

PYLA-SYNTH COLORS

Fast colors for the New Synthetic Detergents in Red, Blue, Green, Amber and Yellow.

- *We offer a full line of fast colors for all soap and soap products.*
- Send for free samples.
  Send for price lists.

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St. New York City 14

Cable Address "Pylamco"

AUTOMATIC SOLUTIONIZERS

The best equipment ever built

FOR DISPENSING DETERGENTS TO WASH TANKS OF DISHWASHING MACHINES.

ENTIRELY AUTOMATIC
COMPLETELY HYDRAULIC

HOLDS WASH SOLUTIONS CONSTANT TO ANY USABLE DEGREE

Permanent Carefree Troubleproof Economy

INDEPENDENT SPECIALTIES

152 W. 75th Street Chicago 2, Ill.

ADVERTISING

CLOSING DATE

for SOAP AND SANITARY

CHEMICALS is the

10th

of preceding month

Your cooperation in furnishing copy instructions on time will help us meet our publication date.

Broll Fuld Chief Chemist

Harry S. Broll has recently been named chief chemist of Fuld Bros., Inc., Baltimore. Mr. Broll has been with the Fuld organization for many years.

Issues PCO Data

The National Pest Control Association, Brooklyn, recently issued a report on rodent control covering types of contamination for a large variety of foodstuffs by locality. The report lists ways and means of using rodenticides to combat contamination.

The Association also has issued data on recommendations on conditions governing the use of 1080. Factors to be considered include: (1) habits of the rodent to be controlled; (2) efficiency of alternate control methods including preventive measures; (3) judgment and competency of operators in placement of the poison; and (4) interference by employees or irresponsible persons, particularly children after the poison is placed.

The advertising committee of the Association is issuing a number of broadsides which are useful for posting and thereby gaining the attention of prospective clients for pest control services. The material is being planned and distributed by Herman C. Militzer, Toledo, O. Promotional pieces are 8½ x 11" and are available at $15.00 per thousand.

Vote on Sanitization

The National Association of Insecticide & Disinfectant Manufacturers recently canvassed its members on the question of adopting certain definitions relating to sanitization. The N.A.I.D.M. membership was asked to vote on the definitions as published in the article by A. S. DuBois, which appeared in the May, 1949 issue of *Soap & Sanitary Chemicals*.

CMRA Elects Russell

George W. Russell, assistant sales manager, Industrial Chemicals Divison, American Cyanamid Co., New York, was elected president of the Chemical Market Research Association for 1949-50 at a meeting held in New York recently.

Other new officers elected include Kenneth Burger, Esso Standard Oil Co., New York, vice president and E. H. Bohle, Jefferson Chemical Co., New York, treasurer. Fritz Von Bergen, Westvaco Chemical Division of the Food Machinery & Chemical Corp., New York, was re-elected corresponding secretary and Paul Weller, Wyandotte Chemicals Corp., Wyandotte, Michigan, was re-elected recording secretary.

Acquires Browning Co.

Innis, Speiden & Co., New York, recently acquired as a wholly-owned subsidiary, E. S. Browning Co. of San Francisco and Los Angeles, W. H. Sheffield, president of the parent company, announced.

E. S. Browning Co. represents a large number of chemical manufacturers and will continue to operate under its own name but will sell, in addition to its own line, all of the products of Innis, Speiden & Co. Edgar S. Browning remains as president and general manager of the California firm.

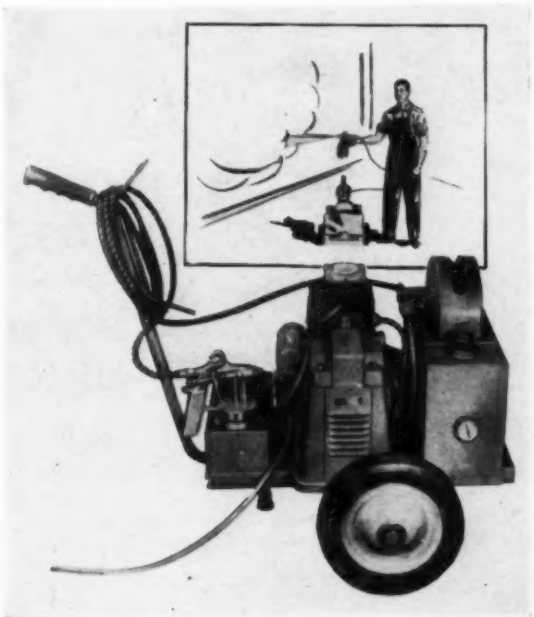
E. A. Smith, formerly head of the gum department of the Innis, Speiden organization, has joined the Browning company and will coordinate the activities of the two companies.

Powell Toxaphene Bulletin

A new bulletin on toxaphene was issued recently by John Powell & Co., New York. The bulletin covers results of field tests in many states where the insecticide has been applied. Physical and chemical data, a description of analytical procedures, labeling information and related matters of interest to insecticide formulators are covered. Copies are available free to insecticide manufacturers and formulators and to interested state and local Department of Agriculture representatives by writing the company's technical service department, One Park Ave., New York 16.

Tuma Joins Oil Specialties

Dr. Vladimar Tuma has joined the staff of Oil Specialties & Refining Co., Brooklyn, N. Y., according to an announcement by Joseph Green, president of that company. Dr. Tuma will act as chief chemist and laboratory director for the Brooklyn wax and specialty manufacturer. During the past twenty years, he has specialized in the technical development of waxes, polishes and allied chemical specialties. Prior to joining Oil Specialties, Dr. Tuma was connected with Buckingham Wax Co., Long Island City, for five years and before that with S. H. Kress & Co., New York, for twelve years.



West Disinfecting Co., L. I. City, N. Y., offers the "Super Mistorizer," a three part portable sprayer unit consisting of a compressor unit, a three gallon insecticide tank and a pressure feed type hand spray gun mounted on a wheeled cart. The Mistorizer will fog 10,000 cubic feet in five minutes and handles areas up to 50,000 cu. ft. without having to be moved. One filling is adequate for treating 250,000 cu. ft. of space.

TRI SODIUM PHOSPHATE

CARBON TETRACHLORIDE

Now Available from Warehouse Stock

JOHN A. CHEW

INCORPORATED

60 E. 42nd St. MU. 2-0993

NEW YORK CITY 17

KNOW

the Cleansing Power of Your Detergents.

Such can readily be determined by the

"STANDARD PSC SOILED COTTON"

Swatches or Tests are available from us. Evaluation of detergents with standard soiled cotton fabric is not new. The standard soiled fabric we now offer has a 25-year background. We will either sell you the "Standard PSC Soiled Cotton" or our laboratory will evaluate your detergents with it, reading the results with the Hunter Reflectometer.

To Determine the Value to You of

"STANDARD PSC SOILED COTTON"

just ask Dick Moore to send data.

FOSTER D. SNELL, INC.

Chemists
Engineers

29 W. 15 St. New York 11, N.Y. WA 4-8800

Wm. Diehl & Co.

SHELLAC
Refined Bleached — Orange

CANDELILLA WAX

JAPAN WAX

CARNAUBA WAX and
High M. P. Substitutes

BEESWAX
Natural High Lustre Wax H. M. P.

336 W. 42nd St., New York 18, N. Y.
Phone: BRyant 9-5211

***Tamms* SILICA**
Soft Amorphous Type

Grades to meet various abrasive requirements . . . for all kinds of metal polishes.

***Tamms* TRIPOLI**
Rose and Cream Colors

Once-ground, double-ground and air-float — ideal grades for buffing and polishing. Also rubbing compounds.

Preferred for POLISHES!

Tamms

Tamms products are widely used in the polish trade, preferred for quality results. Write today for prices and samples.

***Tamms* MULTI-CEL**
Diatomaceous Earth

Top grade, ground extremely fine. A milder abrasive than silica. Best for silver polish.

***Tamms* BENTONITE**
(Suspension Medium)

Very finely-ground colloidal clay. Wholly soluble — absorbs 5 times its weight in water.

Dept. RM-3, **TAMMS SILICA CO.,** 228 N. La Salle Street, Chicago 1